

DOCUMENT RESUME

ED 440 027

SO 031 660

TITLE Educational Innovation for Sustainable Development. Report of the Third UNESCO-ACEID International Conference (Bangkok, Thailand, December 1-4, 1997).

INSTITUTION United Nations Educational, Scientific and Cultural Organization, Bangkok (Thailand). Principal Regional Office for Asia and the Pacific.

PUB DATE 1998-00-00

NOTE 359p.; Conference was organized by the Asia-Pacific Centre of Educational Innovation for Development (ACEID), the Asia-Pacific Programme of Educational Innovation for Development (APPEAL), and the National Education Commission of Thailand.

AVAILABLE FROM United Nations Educational, Scientific, and Cultural Organization, Principal Regional Office for Asia and the Pacific, P.O. Box 967, Prakanong Post Office, Bangkok 10110, Thailand.

PUB TYPE Collected Works - Proceedings (021)

EDRS PRICE MF01/PC15 Plus Postage.

DESCRIPTORS Case Studies; Developing Nations; Economic Development; *Educational Innovation; *Educational Planning; *Equal Education; Foreign Countries; Social Development; *Sustainable Development

IDENTIFIERS *Asia Pacific Region; UNESCO

ABSTRACT

This report illustrates how the Third UNESCO-ACEID (Asian Centre of Educational Innovation for Development) International Conference provided ideas and case studies on key aspects of educational innovation for sustainable development. At the conference there were over 20 paper presentations from invited regional and international experts, almost 160 concurrent paper presentations from conference participants, three symposia, and an education fair with opportunities to visit UNESCO and other displays. The deliberations and documents from the conference, namely the speeches presented during the official opening, keynote addresses, and the 20 papers presented during the plenary panel sessions are listed. The reports' chapters are, as follows: (1) "Opening Addresses"; (2) "Keynote Address: Federico Mayor"; (3) "Thematic Resource Papers on Key Issues and Concerns"; (4) "Case Studies in Action"; (5) "Thematic Resource Papers on Education for All"; (6) "Case Studies in Action"; (7) "Keynote Address: Professor Phillip Hughes"; (8) "Paper Abstracts"; (9) "Programme of Activities"; and (10) "List of Participants." (BT)

ACEID

Educational Innovation for Sustainable Development

ED 440 027

PERMISSION TO REPRODUCE AND
DISSEMINATE THIS MATERIAL HAS
BEEN GRANTED BY

C. Villanueva

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)

1

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

- ☒ This document has been reproduced as
received from the person or organization
originating it.
- ☐ Minor changes have been made to
improve reproduction quality.

Points of view or opinions stated in this
document do not necessarily represent
official OERI position or policy.

ACEID

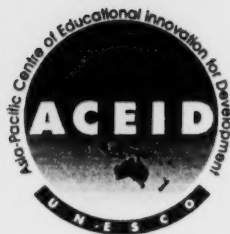


APPEAL

Report of the Third UNESCO-ACEID International Conference

Asia-Pacific Programme of Educational Innovation
for Development

SO 031 660



Educational Innovation for Sustainable Development

Report of the Third UNESCO-ACEID International Conference

Organized by **ACEID** and **APPEAL**

in co-operation with the **National Education Commission of Thailand**

held in Bangkok, Thailand, 1-4 December 1997



Asia-Pacific Programme of Educational Innovation for Development

UNESCO PRINCIPAL REGIONAL OFFICE FOR ASIA AND THE PACIFIC
Bangkok, 1998

UNESCO Principal Regional Office for Asia and the Pacific.

Educational innovation for sustainable development; report of the Third UNESCO-ACEID International Conference organized by ACEID and APPEAL in co-operation with the National Education Commission of Thailand, held in Bangkok, Thailand, 1-4 December 1997. Bangkok: UNESCO PROAP, 1998.

I v. (various pagings)(Asia-Pacific Centre of Educational Innovation for Development)

1. EDUCATIONAL INNOVATIONS. 2. EDUCATIONAL PLANNING. 3. SUSTAINABLE DEVELOPMENT. 4. ECONOMIC AND SOCIAL DEVELOPMENT. 5. EDUCATION FOR ALL.

I. Title. II. Series.

371.39

© UNESCO 1998

Published by the
UNESCO Principal Regional Office for Asia and the Pacific
P.O. Box 967, Prakanong Post Office
Bangkok 10110, Thailand

Printed in Thailand

The designations employed and the presentation of material throughout the publication do not imply the expression of any opinion whatsoever on the part of UNESCO concerning the legal status of any country, territory, city or area or of its authorities, or concerning its frontiers or boundaries.

Table of Contents

Preface

Chapter One: Opening Addresses

Chapter Two: Keynote Address: Federico Mayor

Chapter Three: Thematic Resource Papers on Key Issues and Concerns

Chapter Four: Case Studies in Action

Chapter Five: Thematic Resource Papers on Education for All

Chapter Six: Case Studies in Action

Chapter Seven: Keynote Address: Professor Phillip Hughes

Chapter Eight: Paper Abstracts

Chapter Nine: Programme of Activities

Chapter Ten: List of Participants

PREFACE

Never before in the history of humankind has it been so evident that we need to find sustainable ways of living in harmony with each other, and with the Earth.

The fire haze over parts of South East Asia in recent months; the traffic congestion and noise pollution in many of our cities; the El Nino droughts; the plight of refugees; the existence of poverty amidst wealth in so many of our countries; and inequalities in the distribution of educational opportunities and income according to socio-economic status, ethnicity, gender, and between urban and rural areas, are vivid proof that our discussions during this Third UNESCO-ACEID International Conference on Educational Innovation for Sustainable Development are indeed vital ones for all educators, whether they be in government departments, schools, teacher training colleges, universities or NGOs.

This conference has provided a feast of ideas and 'case studies in action' on key aspects of 'educational innovation for sustainable development'. There have been over twenty paper presentations from invited regional and international experts, almost 160 concurrent paper presentations from conference participants, three symposia and an Education Fair with opportunities to visit UNESCO and others displays on various aspects of education for sustainable development. If this international conference is to be effective in meeting its aims, it is essential that all of those who have taken part in this meeting take the new ideas, insights and understandings gained back to their own countries, in order to share these with others, and to implement them in practical ways for the betterment of educational practice.

This document reports on the deliberations and outputs of the conference, namely the speeches presented during the Official Opening, keynote addresses, and the twenty papers presented during the Plenary Panel Sessions - the latter in unedited form. A separate book publication is being prepared for publication in 1998 which will report more fully on the conference with regard to discussions that occurred during the Roundtable Sessions and the content of the papers presented during the concurrent sessions on Wednesday of the conference.

On behalf of UNESCO-ACEID, Bangkok, I wish to thank all those who attended the conference to present papers, those who contributed to the various discussion sessions, the Rapporteurs who recorded proceedings and the Publications

Unit at UNESCO Bangkok who have designed, formatted and printed all documents related to the conference, including this Report. I particularly thank the Secretarial staff in ACEID, and also the Conference Co-ordinator and Chief Rapporteur, Ian Birch, for their essential contribution in the overall organization of this conference.

Rupert Maclean
Chief of ACEID; and
Chair, Conference Organizing Committee

CHAPTER ONE

OPENING ADDRESSES

**Address by Federico Mayor, Director-General of UNESCO
in making a Presentation on Behalf of UNESCO to
H.R.H. Princess Maha Chakri Sirindhorn**

**Remarks of Welcome by Victor Ordonez, Director,
UNESCO PROAP, Bangkok**

**Report to H.R.H. Princess Princess Maha Chakri Sirindhorn
by Mr. Abhisit Vejjajiva, Minister to the Prime Minister's Office**

**Address by H.R.H. Princess Maha Chakri Sirindhorn
Opening the Conference**

**COMMENTS BY THE DIRECTOR-GENERAL OF UNESCO ON THE
OCCASION OF
THE PRESENTATION OF UNESCO CD ROM'S AND PUBLICATIONS TO
H.R.H. PRINCESS MAHA CHAKRI SIRINDHORN,
DURING THE OFFICIAL OPENING CEREMONY,**

Your Royal Highness,

On behalf of UNESCO, the distinguished participants of the Third UNESCO-ACEID International Conference and the distinguished visitors here present, I thank Your Royal Highness for gracing us with your presence here today at this Opening Ceremony of the Third UNESCO-ACEID International Conference on "Educational Innovation for Sustainable Development".

Your Royal Highness has been described as "the patron of education in Thailand", an accolade of undoubted worth. But I dare to suggest that it is not an adequate acknowledgement for your contribution to education. For the term "Patron" smacks a little of distance and aloofness. Your patronage - to the contrary - has been most participative. Not only have you journeyed the education path from school entry to the completion of doctoral studies - with distinction, I may add - but you have also continued to contribute to and be actively involved in education in all its aspects: primary and secondary schooling, tertiary education, research projects, publications and much more.

The accolade 'the patron of education in Thailand' is also too restrictive. You are well known as an educator of distinction outside of Thailand with your royal visits to places as far apart as Norway and Antarctica (literally). Your contribution to education internationally is evident from the many Doctorates, Memberships and Awards bestowed upon Your Royal Highness by countries throughout the world.

The theme of this Conference is one very familiar to you and of concern to you. Educational innovation was, in fact, the theme of your doctoral thesis and sustainable development has been very much the central activity of several of Your Royal Highness's Projects. So UNESCO could not have invited a person more familiar with the theme of this Conference than Your Royal Self.

UNESCO is also delighted to have been invited by Your Royal Highness to participate in some royal projects in Thailand.

Your Royal Highness, your activities have embraced education, science and culture and your expressed concerns are for peace, equity and justice for all. In fact your interests are UNESCO's concerns.

On behalf of UNESCO, I respectfully request Your Royal Highness to accept this gift as a token of UNESCO's gratitude to you for your outstanding contribution to education, science and culture, and to peace, equity and social justice.

**WELCOME REMARKS FOR THE
ACEID-APPEAL CONFERENCE ON SUSTAINABLE DEVELOPMENT**

Victor Ordonez, Director PROAP, Bangkok

Your Royal Highness, Princess Maha Chakri Sirindhorn, Your Excellency, Mr. Abhisit Vejjajiva, Minister to the Prime Minister's Office, Esteemed UNESCO Director General Federico Mayor, Excellencies, ladies and gentlemen,

I hope I will be forgiven a great sense of pride and pleasure in welcoming you all here today. In the history of UNESCO in Thailand, today will indeed be remembered as a historic event.

We have in the first place been royally gifted with the presence of Her Royal Highness Princess Maha Chakri Sirindhorn, whom we all know and admire for her untiring efforts and projects in education and social spheres, and whom many of you from abroad remember as the Princess who officially opened the landmark Jomtien World Conference on Education for All in 1990. We also have His Excellency the Minister to the Prime Minister's Office, representing the Royal Thai Government, whose presence we welcome. And of course we have the long awaited visit of the UNESCO Director General himself, who has kindly agreed to share with us his thoughts in the inaugural Raja Roy Singh lecture to be delivered this afternoon. I note with pride that there are over 450 registered participants from over 40 countries in Asia and around the world; it is a tribute to both the organization, hard work, and emerging tradition that is starting to form around this annual ACEID intellectual forum, now in its third year, and to your perception of the importance of our theme.

I am of course equally proud that our distinguished company is matched by the timeliness of our theme this week--education and sustainable development--and the scholarly and experience-based substantive preparations that have accompanied this theme. It represents first and foremost the fruits of productive partnerships, principally with our co-sponsor the National Education Commission of Thailand under the dynamic leadership of Dr. Rung, and then also with the many organizations, institutions, and governments throughout Asia and the Pacific who over the years have collaborated with our PROAP office here in Bangkok. It is the cumulative experience and wisdom of these partners that we have been collating and distilling over the years through our APEID and APPEAL networks, which we are now bringing to bear on the theme of sustainable development and presenting to you.

The topic of Thailand's, indeed of ASEAN's, economic crisis has been the subject of many a discussion, not just in financial boardrooms, but also in academic halls, coffee shops, and even sidewalk stalls. If there is anything to be learned from this experience, it

is that development that is short-sighted cannot endure, and if development is to be true development, it must be sustainable--economically, environmentally, politically, socially. Simply put, sustainable development must be in the hands of true humans, those whose education and culture have given them, not just the technical content and tools, but more importantly the ethical systems that tomorrow as much as today, that value future generations as much as their own. How to shape that education, and what on the ground innovative experiences have started to pave the way for the rest of us--that is the theme of this Conference.

In bringing my remarks to a close, let me conclude with a promise; or better with an invitation for you to make a promise to yourselves. Like myself, many of you are veterans of dozens of conferences, workshops, and meetings. Like myself, many of you have seen or heard many brilliant ideas go by at these events which, ultimately, have made little difference to the way you work or the effect of your work on the educational systems you serve. It is true that this Conference will also see a wealth of ideas on sustainable development; indeed, you will have a smorgasbord of no less than 22 invited Keynote and Plenary Panel Presentations and 150 concurrent paper presentations by participants to choose and benefit from. But I hope this Conference will be different in that it is specifically designed to provide the maximum practical benefit to you and your work. The topics and their speakers have been carefully chosen, yes, but beyond that we have built into this week equal doses of both concepts and living case studies presented by those who have actually developed and lived through them. We have plenary panels, roundtables, concurrent paper sessions and an educational fair that will provide a veritable marketplace of the best ideas at the cutting edge and plenty of opportunity for active participation and mutual sharing. The promise that I ask you to make to yourselves is that you will actively go through this rich experience in an active "search" mode, and identify that one idea or those few ideas that you can actually take back, modify, own, and use to focus your educational efforts more effectively on contributing to sustainable development. Yes, there will be proceedings of this Conference; in fact we are planning to publish two volumes from the richness of ideas before us. And, yes, from your discussions PROAP intends to fashion specific implementation projects for which we will seek funding, so that practical results follow. But finally this Conference will succeed or fail, depending on your ability to deliver its promise, and your promise, to yourself and your noble work.

It is on behalf of Mr. Rupert Maclean and my PROAP colleagues that I both welcome you and challenge you on this auspicious occasion.

ADDRESS BY

**HIS EXCELLENCY MR. ABHISIT VEJJAJIVA
MINISTER TO THE PRIME MINISTER'S OFFICE
ON THE OCCASION OF THE OPENING CEREMONY OF
THE THIRD UNESCO-ACEID INTERNATIONAL CONFERENCE
"EDUCATIONAL INNOVATION FOR SUSTAINABLE DEVELOPMENT"**

Your Royal Highness, Princess Maha Chakri Sirindhorn

May I, Mr. Abhisit Vejjajiva, Minister to the Prime Minister's Office of Thailand, on behalf of the Royal Thai Government, the distinguished participants, and those present at this auspicious ceremony, express our deep gratitude to Your Royal Highness for graciously presiding over today's Opening Ceremony of the Third UNESCO-ACEID International Conference on "Educational Innovation for Sustainable Development". We are indeed highly honoured by your presence.

With Your Royal Highness's permission, may I now present some brief remarks on this important and timely International Conference.

Since UNESCO's Asia-Pacific Centre of Educational Innovation for Development (ACEID) and Asia-Pacific Programme of Education For All (APPEAL) have played such a vital and decisive role in promoting educational innovation for sustainable development throughout the vast and diverse Asia-Pacific region, the Royal Thai Government (through the Office of the National Education Commission) was very pleased to co-operate in the organization of this UNESCO Conference.

It is hoped that this International Conference will provide an opportunity for all distinguished participants to draw upon each other's ideas and experiences, as well as to strengthen mutual understanding and co-operation amongst member countries. Additionally, this will enable us to highlight our own government's awareness of educational innovation as a key factor in development in Thailand.

Today, all over the world, whether it be in developed or developing countries, we have been paying greater attention to sustainable development, recognizing the importance of its roles in promoting the quality of life of the people and reinforcing natural resource and environment conservation.

Educational innovation, in Thailand, has always been a focus of interest, as evidenced by various projects initiated by His Majesty the King and Your Royal Highness, all of which stress the role of innovation to improve the quality of life of the

people and to promote Thai Wisdom innovative ideas. Once the facilities for the Royal Development Projects were established, His Majesty introduced modern knowledge and technology to promote productivity by initiating the establishment of Royal Development Study Centres, inspired by the Royal initiatives. During the past several years, many grassroot level educational innovations have been successfully implemented by communities throughout Thailand.

Your Royal Highness, the theme of this International Conference "Educational Innovation for Sustainable Development" is thus very important and relevant to the remarkable re-engineering of education for change, that is occurring in many countries all over the world. This conference will no doubt generate much debate and the fruitful exchange of ideas regarding many aspects of the essential roles which education and schooling play in achieving sustainable development. The experiences of all member countries, will hopefully provide a sound foundation for policy recommendations and initiatives in this important area in the future.

Since the time is now auspicious, may I beg Your Royal Highness graciously to deliver an address to mark the opening of the Third UNESCO-ACEID International Conference, "Educational Innovation for Sustainable Development".

**ROYAL ADDRESS OF
HER ROYAL HIGHNESS PRINCESS MAHA CHAKRI SIRINDHORN
ON THE OCCASION OF THE OPENING CEREMONY OF
THE THIRD UNESCO-ACEID INTERNATIONAL CONFERENCE ON
EDUCATIONAL INNOVATION FOR SUSTAINABLE DEVELOPMENT**

Mr. Director-General of UNESCO,
Mr. Deputy Prime Minister,
Excellencies, and
Distinguished Participants

I am pleased to preside over the Opening Ceremony of the Third UNESCO-ACEID International Conference on Education today; and to welcome all of you, our honoured guests, from various friendly countries in the Asia-Pacific region and from around the world.

I feel honoured to be taking part in such an important and timely conference, with so many distinguished representatives from the many countries participating in this meeting to explore the most effective means to promote **education for sustainable development** for the betterment and improvement of the peoples of the world. It is my hope that all of us here today can unite together in a spirit of peace, goodwill and international understanding to achieve a better future for our children and grandchildren.

All countries want **development**, because this implies improvement; and we want development that is long term and therefore **sustainable**. But we also want development which does not only stress economic matters but which pays attention to important social, cultural, political and environmental considerations. Countries are increasingly not willing to accept economic development at any cost; and they expect the benefits of development to reach all sections of the community.

In Thailand we are keen to learn from others, as we modernize and develop. But we are, at the same time, keen to maintain our own, distinctive Thai culture and identity which has evolved over many centuries: to maintain what it means to be Thai. Like many other countries in the region, Thailand is seeking to come to terms with finding a harmonious balance between modernization and tradition; between global and local concerns; and between the materialistic and spiritual aspects of what it means to be a human being. We recognize that this balance can partly be achieved by improving the quality, relevance and effectiveness of education and schooling in our country.

Education has always been highly valued in Thai society. In recent times, with the reform and re-engineering of our education system, an increasing emphasis has been placed on the importance of achieving effective partnerships in education by stressing

home-school links, the decentralization of decision-making so communities are empowered to influence the education and schooling of their children and the community as a whole, and by recognizing the importance of both non-formal and formal modes of delivery, and the concept of life-long education for all. I know that many of these concerns are keenly shared by other nations throughout the world, and also by UNESCO as it works closely with countries to find the most effective pathways to ensue a relevant, high quality education for all.

Education for All is of special importance to countries in the Asia-Pacific region, since this vast region is home to 72% of the world's illiterates. Here in Thailand, 'education for all' is a core provision of our new Constitution, that was promulgated on 11 October 1997. Under the New Constitution, the State has the responsibility to ensure that all people have an equal right to a minimum of 12 years high quality education, free of charge.

I trust that this conference will provide an opportunity for the distinguished participants assembled here to draw upon one another's ideas and experiences to find most effective ways to achieve educational innovation for sustainable development.

The appropriate time has now arrived, and so I wish to declare open the Third UNESCO-ACEID International Conference on Education. I trust that the conference will proceed smoothly and meet with every success, as planned. Finally, I wish all participants a most pleasant and enjoyable stay in Thailand.

CHAPTER TWO

KEYNOTE ADDRESS BY FEDERICO MAYOR, DIRECTOR-GENERAL OF UNESCO

The Raja Roy Singh Keynote Address
by
Mr. Federico Mayor
Director-General
UNESCO
at the Third UNESCO-ACEID International Conference
"Educational Innovation for Sustainable Development"

Since the Stockholm Conference on the Human Environment in 1972, innumerable summits, conferences, meetings, symposia and round tables have debated the question of how we square development with the proper management of non-renewable resources and the preservation of a decent environment for present and future generations. Five years on from the Earth Summit in Rio and the ECO-ED meeting in Toronto, the practical results of all these deliberations and agreements have been very limited - as underlined at the special session of the General Assembly held in New York last June.

I hope this meeting will move beyond words - beyond the interminable discussions about 'integrated', 'endogenous', 'sustainable', 'human' or whatever the latest fashionable modifier of development may be - and concentrate on the essential question of how we get from where we are to where, broadly speaking, we want to be. I am reminded of the story of the African village elder who, asked by a visiting 'expert' if he had understood his lengthy exposition on sustainable development, replied: "If after everything I do, the elders show with their smiles and nods that they approve of my action, and if the children in the womb kick with joy at the prospect of coming into this world, then I have made a contribution to sustainable development. Have I understood what you have said?". Those who have the power to shape events might follow the African elder's example and ask themselves whether their actions with regard to the environment have merited the smiles and approbation of their contemporaries and future generations.

Your Royal Highness the Princess Maha Chakri Sirindhorn,
Honourable Minister to the Prime Minister's Office, Mr. Abhisit Vejjajiva,
Excellencies,
Distinguished Participants,
Ladies and Gentlemen,

I wish you a very warm welcome to this Conference organized by the Asia-Pacific Centre of Education Innovation (ACEID) and the Asia-Pacific Programme of Education for All (APPEAL) at PROAP. We thank our UNITED NATIONS partners for their positive contribution to this Conference and are gratified by their presence here today. Finally we are most grateful to the Office of the National Education Commission of Thailand for its co-operation in the organization of this event.

I should first like to say a few words about the person in whose honour this address is being given. Raja Roy Singh - now living in retirement in Chicago - was a great servant of

education in this region. Following high-level experience in India, he served as UNESCO's Regional Director and later Assistant Director-General at the Bangkok Office. He was instrumental in the founding of ACEID in 1973 and has published extensively on educational problems in developing countries. His contribution to the development of education in the Asia-Pacific region will be recognized in this way at each UNESCO-ACEID International Conference on Education.

Let me begin at the beginning. We cannot talk about education for sustainable development, or about educational innovation, without first addressing the challenge of **education for all**. This is the challenge that UNESCO and its partners - UNICEF, UNDP, the World Bank - took up at the World Conference on Education for All, in Jomtien, in 1990, where the international community committed itself to a programme of action for meeting basic learning needs, reducing illiteracy, expanding social services for children, and improving the quality of vocational education. The Jomtien process later gave rise to the E-9 initiative, whereby nine high-population countries - Bangladesh, Brazil, China, Egypt, India, Indonesia, Mexico, Nigeria and Pakistan, accounting between them for almost three-quarters of the world's illiterates - undertook at New Delhi in December 1993 to expand their efforts to achieve the goals of education for all.

It is fair to say that progress towards realizing the Jomtien goals has been uneven - as has the commitment necessary to achieving those goals. Yet overall there has been significant progress. At the recent UNITED NATIONS meeting in New York to review the implementation of Agenda 21, there was only one good piece of news - the decline in the rates of global population growth. Why is this happening? Because more and more people, particularly women, today have access to education. In the last six years there has been a substantial reduction in the illiteracy rate among the 15 to 60 age group. This means we have been able to reduce illiteracy by more than 50 million, equivalent to one third of the out-of-school children in the world.

The other fundamental - the pre-requisite for all forms of educational advance - is **lifelong** education. I think that the concept of "throughout life" is the most important addition recently made to educational thinking. Education must no longer be regarded as a one-chance affair, restricted to a particular period of one's life. It must be seen - at all levels - as a continuing process, whereby people are offered learning opportunities throughout their lives by means of diversified delivery systems, both formal and informal. Only in this way shall we succeed in reaching the unreached and including the excluded and in meeting the formidable challenges of our time, not least that of sustainable development.

Education is first and foremost a human right - as proclaimed in Article 26 of the Universal Declaration of Human Rights, the fiftieth anniversary of whose adoption we shall begin to commemorate in a few days' time. It is also the key to building up the skills and capacities in all domains necessary to techno-economic development. Above all, however, it is the means whereby we may hope to address some of the most profound problems confronting our societies on the eve of a new century and millennium, to meet the supreme

challenge of mastering rather than being mastered by events in an age of multiple and accelerating change.

In the world of tomorrow, education must be concerned with more than simply the transmission of knowledge. It must place a premium on invention, innovation, anticipation and adaptation. It must encourage enterprise. It must above all foster forms of behaviour, life styles and values necessary for human survival on a crowded planet. In the words of the Delors Report on Education for the 21st Century, it must be about not only learning to know but also learning to do, learning to be and learning to live together. Living together, I need hardly add, means not only in harmony with each other but with the biosphere of which we are a part.

Education in all its forms is highly relevant to the achievement of sustainability. Basic education impacts positively in a multitude of ways on the interrelated problems of poverty, environmental degradation and food security. Improved provision for girls and women brings benefits in terms of declining fertility rates and better standards of health care. Education is also an important factor in furthering social cohesion and democratic governance. Science education has a special role to play in sustainable development - through capacity building, particularly in such fields as ecotechnology and renewable energies, but also by promoting the scientific awareness increasingly necessary to informed ethical choices.

However, education in its traditional forms is not sufficient to meet the immense challenge posed by the phenomenon of unsustainable living. People are increasingly aware of the dangers we face and of the need for informed action. They smell the problem in the air they breathe; they see it in congested living spaces and blemished landscapes; they read in the newspapers or hear on the media stories of global warming, rising ocean levels, holes in the ozone layer, destruction of the world's forests and the disappearance of species. They sense a link between these afflictions and a world that breeds poverty, exclusion and violence. But new educational approaches are required if people are to act upon this awareness, if we are to achieve the necessary changes of life styles, if we are to be successful in combating waste, in mobilizing support for public and private initiatives, in developing a new ecological vision and in fostering a sense of global solidarity. The challenge - as identified in Chapter 36 of Agenda 21 - is no less than that of **reorienting education** "to promote widespread public understanding, critical analysis and support for sustainable development".

Education for sustainable development thus conceived cannot be other than innovatory. It represents a new vision for education. It implies both new educational content and new structures. It is an essentially transdisciplinary activity, informing other subjects with its values and emphases rather than constituting a discipline in its own right. To this extent, it requires curricula to be organized along different lines. Its interdisciplinary content needs to be geared to the various target groups, moving - for example - from a simple appreciation of nature and other cultures to a progressively more cognitive and problem-solving approach. Typically, in accordance with the precept of "acting locally and thinking globally", it seeks to avoid abstraction, taking local problems as the point of departure for more general analyses and commitments. It also favours an action-oriented approach, with a

view to prompting personal initiatives and social participation. Education for sustainable development needs to range more widely than traditional environmental education. It should explore the economic and social implications of sustainability, encouraging learners to reflect critically on their place in the world, to identify elements of unsustainability in their own lives, to ponder the difficult trade-offs between conflicting interests. It should also embody a cultural dimension, reflecting the need to define culture-specific ways of achieving common developmental ends. In this way, education for sustainable development can take account - for example - of the experience of indigenous and minority cultures, which have an original and important contribution to make to sustainable development.

Education for sustainable development places values where they belong - at the centre of the educational enterprise. It highlights issues of equity and the need for a greater sharing of knowledge and resources of all kinds. It raises questions of human rights, such as the safeguarding of the rights of future generations on which UNESCO's General Conference last month adopted an important Declaration. It invites reflection on what I like to call the 'ethics of time' - the moral responsibility to act in time to avoid the possible occurrence of irreversible events. Since it recognizes values as one of the important outcomes of learning, education for sustainable development also calls into question the ways in which performance is traditionally validated in formal educational settings.

Clearly, the challenge posed by education for sustainable development - not least for teachers and for teacher training - is a radical one. The task of reorienting education to sustainable development is highly complex and will take time. Some countries are already moving in this direction and are pointing the way forward for others. Individual educators and institutions are also experimenting with relevant concepts and methodologies. However, a great deal remains to be done at the level of policies and structures to redeem the pledges embodied in Agenda 21.

One of the greatest needs at the present time is to mobilize support at all levels for the new conception of education that the goal of sustainability demands. An international framework for action exists, deriving from Chapter 36 of Agenda 21, the recommendations concerning education of major United Nations Conferences and the work of the United Nations Commission on Sustainable Development; and UNESCO, through its transdisciplinary project 'Educating for a Sustainable Future' and as Task Manager for the implementation of Chapter 36, is playing a leading role in this regard. A current priority is the forging of new partnerships - between governments, the private sector, parliaments, academic and scientific communities, NGOs, local communities and the media - as the key to the kind of top-up and top-down change on which progress must be based. This will be an important theme of the Conference we are organizing in the near future at Thessaloniki with the Government of Greece.

Your Royal Highness,
Excellencies, Ladies and Gentlemen,

This Third UNESCO-ACEID International Conference is taking place at a moment of great change, at a time of uncertainty but also opportunity. An enormous responsibility rests with the leaders and implementers of educational reform in this vast and diverse Asia-Pacific region - which is home to 63% of humanity and on which the problems of sustainable development impinge with particular urgency. The discussions you will have and the decisions you will take in the days to come will play a part in shaping the future of the region. Our duty as educators is to focus our energy and idealism upon building a society of peace, progress and prosperity. In all our cultures we must strengthen the function of peace-building. We must infuse people everywhere with an ethic of sharing and caring. We must prepare the ground for a new civilization in which the word and not the sword will prevail. This, in the final analysis, is the task to which we must devote ourselves: to build peace in the minds of all and further the transition from a culture of war to a culture of peace based on justice and equity. Education for sustainable development is an essential part of this great endeavour, and it is in our hands to ensure that it becomes a potent reality for the benefit of all humanity.

CHAPTER THREE

THEMATIC RESOURCE PAPERS ON KEY ISSUES AND CONCERNS

Anthony Hewitt, UNICEF, Bangkok

Michael Heyn, UNDP, Bangkok

Saisuree Chutikul, Office of the National Education Commission

Savitri Suwansathit, Thailand National Commission for UNESCO

Suvit Yodmani, UNEP, Bangkok

REALITIES AND REFLECTIONS: SOCIAL AND HEALTH ISSUES IN THAILAND

Mr. Anthony Hewett
UNICEF Representative for Thailand

Realities

One month ago I was in Khampralai in Thailand's North East talking to some unsung heroes of the country's development struggle. Four years ago Khampralai village faced the same crisis as many others in that perennially poor and water-short region -- over-dependence on heavily-promoted cash-crops like cassava and sericulture, low and unpredictable returns on rice, and crushing indebtedness. Parents who migrated to the labor markets of Bangkok left their children in the care of grandparents who also had to shoulder the burden of unremitting toil in the fields. Health problems abounded, including stress and high blood levels of pesticide; child malnutrition was worsening. Apathy and inertia were widespread.

Alerted by the health problems and pursuing these to their root causes, the district hospital director - also a community development activist - began discussing the situation with farmers. Once confidence had been built, interested members of the community began to reflect on and analyze, then list, their problems. But they had no solutions. The doctor's organization, the Sustainable Community Development Foundation, or SCD, offered to organise study visits to other villages which had confronted similar problems. Over the next six months, 14 self-selecting village members ("natural leaders" in SCD terminology or what other models might term "early adopters") made four such visits in Northeastern and Northern provinces. Some villages they visited were better off than Khampralai, some poorer. Khampralai villagers were inspired to make changes and decided to convince their fellow farmers by demonstration rather than argument. They dug ponds, diversified their crops and switched to organic fertilizer and natural forms of weed and pest control. Their fellow-villagers were quick to follow the example.

Four years later, it's a night and day difference. Fish populate ponds, even around ricefields. Pond banks hold banana plants and fruit trees. Plots of traditional vegetables and herbs are kept pest-free by naturally deterrent plants and weed-free by wood chips covering the surrounding soil. Crops are diversified and soil is healthier. Other villagers were given community land to farm. The ponds water animals, and support flocks of ducks, even in dry periods. Respect for family is stronger, too. Hope has brought parents back and any pretext for husbands to desert their responsibilities has disappeared. Morbidity, mortality and child malnutrition all have gone down. The village leader reports more proactive thinking in dealing with problems. One farmer said: "We feel better spiritually; now our fields are like our babies - we have a personal stake and bond with them; we are *sabaijai*, comfortable in our hearts."

Children are in school, the village has several savings group which loan money to members for dying cloth and making bags, handicrafts and home-processed goods for sale in nearby towns. They also provide reinforcement for social cohesion. Now Khampralai is a stop on other people's study tours. As one villager put it: "We feel our dreams are within our grasp."

Another project I saw about the same time was a hundred kilometers away in Ubol Ratchatani province. This project is building links from school to community as it introduces tracking of student performances to see if faltering is linked to factors in the child's home life.

I was there to watch a group of parents, teachers and village leaders discussing what they wanted for their children's future. Along with practical things like properly-equipped and fully-staffed schools, they also wished their children to be "moral" citizens - by which they meant respecting traditional values while learning the skills to adjust to change and to grasp new opportunities. Several communities represented at this workshop have since followed up on plans developed there, establishing a day care centre and sports field in one community, school libraries and kitchens in two others, and undertaking surveys on the needs of elderly people who are primary child care-givers, and on the extent of child disability. How to accomplish the "moral" citizen objective, however, has found no resolution as yet.

This project in Ubol, run by the Institute of Nutrition at Mahidol University, began with data collection. Student scores going back five years were compiled and cross-related to 16 family situation factors, with data gathered through questionnaires and interviews. Information from families was checked and supplemented where necessary with follow-up at household level and through key informants. Data on attendance was drawn from schools and on nutrition status from the village health centre. These efforts involved students, parents, teachers, health personnel and project field staff and the information was put together on spreadsheets with the help of donated computers, or in some cases without technological help.

The data was analysed with the help of simple statistical techniques such as percentages, averages and mode which are easily understood and readily mastered by the teachers and community members who would in the long run be responsible for the continuation of this process. Thailand is justly famous for its collection of Basic Minimum Needs information which collects data on almost 40 indicators, from every community in the country. However, relatively few of these communities use that information to look at problems or trends as a basis for deciding on action; the information is simply passed to the nearest government administrators who in turn send it on for higher-level aggregation. Any potential for stimulating community action is usually lost.

(There is a chicken-and-egg causality at work here of course - the idea that communities need to take their own action on problems is not exactly pervasive among government officials, in this country or others. Only slowly is the realisation coming that central government is ill-suited to dealing with some problems, especially those which require the cooperation of several agencies. Most elusive of all is the model which demonstrates how "big" government shares power so that communities may tackle those problems or aspects of problems with which they can best deal while government concentrates on "enabling" support, or on equity and "common goods" issues, where government is best placed to act.)

In the Ubol school-based programme, fully one quarter of students were found to be "poor-learners" - suffering from sporadic or chronic faltering and in need of assistance. In one

school I visited, poor-learners who had missed a lot of classes through absence were now being set catch-up homework and getting after-school help with it from other students. Several more remote communities are comparing learning scores with high rates of malnutrition and lack of consistent access to proper health services (certainly not to any standard usually expected in Thailand). Malaria is endemic and preventive measures seem all to have failed. Teachers in these communities seem not to understand adequate nutrition as an important pre-condition for learning. A correlation between high rates of iodine deficiency and poor learning would not be unexpected.

One of the consequences in Ubol has been a significant increase in the interaction between community representatives and the school teachers and principals. This has given a voice to parents concerned about irrelevant curricula, ineffective teaching methods and incompetent or uninterested teachers and school management. Engaged and active staff and management, on the other hand, have been rewarded with positive commendations from their communities and in several cases with accelerated promotion from the Ministry of Education which is encouraging community school boards as a general policy.

Reflections

Development people are often struck by the stultifying effect on traditional communities of rapid economic change and dependence on often-paternalistic government services. What the above two experiences show is the galvanising effect on apathetic communities of group action -- what happens when farmers, parents, teachers and even children become actors in their own development story.

While the spark for this involvement is provided by activist groups and individuals, it is community groups and the experience of collective endeavour, which will sustain and multiply the phenomenon.

But what drives this potent phenomenon of group action, this revival of the sense of community? I will hazard the proposition that it is learning - education in the broadest life-long meaning of the term - which nourishes and underpins sustainable development.

Cognitive psychology, the study of how human beings learn, has for years now been building steadily on the insights of pioneers in non-formal education, Paolo Freire, Malcolm Knowles and others. The current state of the art, as synthesized recently by Dr. David Nicol, of the University of Strathclyde, suggests that the key dimensions of the learning process are cognition, motivation and social context.

In Nicol's perspective, cognition means knowledge that can be used to reason and to solve problems in new contexts, by the learner interacting with, and transforming, received information so as to own it and make it personally meaningful.

Crucial to such an outcome, Nicol emphasizes, is motivation - which is determined by *the learner's personal needs and values* (emphasis added), and what the learner believes he or she can accomplish.

Research on the social context of learning, Nicol says, "stresses that learning *takes place through interaction* (emphasis added) with others and with the wider social culture". Moreover, the research shows, this collaborative and cooperative "group" learning develops critical thinking particularly because the multiple viewpoints involved help make connections among concepts and ideas, because shared goals increase the learner's sense of responsibility and self-efficacy, and because the process gives practice in thinking and explaining, and more generally provides a supportive atmosphere for learning.

Nicol's analysis was made with higher education in mind¹. But, with one qualification, it is not difficult to see the principles at work in Khampralai village and the project communities of Ubol Ratchatani. That one difference is that farmers, teachers and parents do not start with the objective of learning for its own sake. They come together around shared problems--indebtedness and vulnerability to droughts for example, or evidence that their children are not getting the education they need. And, they want *action* to deal with such problems.

As learners, they are self-directed and practical - without time for abstractions and theory. What they need, as Nicol says, is knowledge they can use, that reflects their needs and values, and that not only is optimally achieved through interaction with others but actually must be accomplished in this way since only collaborative and cooperative action can deal with the kind of problems communities face.

Thus, Khampralai villagers found relevance and practicability through group visits to other villages with similar situations and through group learning around water management problems. The processes of data collection in Ubol Ratchatani threw into sharp relief the education problems faced by the community's children, helping parents make sense of what had been perhaps suspected but unclear, and in any case beyond any individual's ability to tackle. In both cases, moreover, communities also learned something more: that once they had identified, assessed and analysed the problem and what the most important causes were, the solutions comprised things they could do for themselves. There was a process which could help them manage their problems better--and that process was learning together and agreeing on action.

At this point I will respond --partly-- to the request to define sustainable development. The answer, of course, depends on whose development we are talking about, but I would say no development is sustainable that does not entail a continuing process of learning by its principal actors/beneficiaries. I would question whether there can be any true development where the beneficiaries are not also fully-functioning actors; certainly there can be no sustainable development.

¹ Research on Learning and Higher Education: Universities and Colleges Staff Development Agency Briefing Paper Forty-Five by Dr. David Nicol, University of Strathclyde.

I would add that the above statement presumes that --as is usually the case-- the actor/beneficiaries are sufficiently learning the limits of their environmental context. My definition of sustainable development would require that myopic economic dogma, which treats non-commercial aspects of community life, including housework and environmental amenity, as "externalities", be decidedly *not* the arbiter of what is and what is not development.

Thus, the social and health issues which enhance or impede sustainability derive from the kind of examples I have cited above, which demonstrate that clients should have their say in assuring service quality, and should be credited with the learning capacity to meaningfully exercise that role. That learning is very likely in some way to involve discovery. Diarrhoea, for example, is not seen as a community concern whereas cholera certainly is. The solution to diarrhoea, however, is clean water and environmental sanitation -- which means that it should be tackled as a public health problem, with quality assurance firmly monitored by the community. Thailand is not deficient in sanitation - indeed it is a model to many countries in the region which send missions to wonder at its accomplishments. Drinking water supply is generally adequate but quality is often questionable - hence diarrhoea continues to plague young children, and may be one explanation for the persistence of mild and moderate malnutrition in Thailand.

How do problems like this, and those of faltering learners at school, get acknowledged as community concerns? The answer seems to be by getting the community involved in measuring and analysing the data. Only by discovering for themselves where problems originate can community members come to conclusions through dialogue and group reflection about what could and should be done. This obviously fulfills the criterion of continuing learning that I have proposed for "sustainable development", which criterion I believe not only can but must be accommodated if development is to be meaningful for those in whose name and for whose ostensible benefit we development professionals work.

I think my examples also suggest systemic educational innovation which promotes an environment for sustainable development, that is, the approach to education long advocated by UNESCO and often described as life-long learning. Implicit in this approach is the recognition that education is not confined to, or even defined by, the processes of formal instruction. Rather, learning may be defined as something which begins with sentience. As soon as we begin to sense our needs, we begin to learn how to meet them, and we go on learning about our environment and the satisfaction of more complex needs throughout infancy, childhood and adolescence... in ways that educators describe as formal, non-formal and informal. Since most public investment goes into formal education, this area has assumed a pre-eminence in our thinking about education that may distort some important judgements.

If formal education is seen as an end in itself, a source of validation, a way of instilling normative values, for socializing and for determining (by competitive examination) the relative usefulness of its graduates, it is already neglecting perhaps its most important task which is to help each learner find his or her own best mode of learning, not only within the classroom but in the world outside --processing the massive amount of information and experience from their daily lives. Learning different ways of making sense of these vast and often confusing inputs of information and experience, and feeling competent in dealing with uncertainty and change,

provide formal education with its most important role and opportunity. The structured learning environment should be re-organised with this objective in mind.

The single most important innovation, towards such an objective, in the relatively few Thai classrooms where it is being practiced, is participatory learning. In one case, children form into project groups to study environmental change in the community over time, collecting their own data - for example through interviews with older inhabitants - and analyzing it together before presenting it as a team to their classmates. In other cases, as in the "catch up" homework in Ubol Ratchatani, children help each other to puzzle out meaning -- and learn something about the values of sharing and solidarity into the bargain.

It is, I hope, self-evident that all these improvements and new opportunities for learning are calculated to improve individual resilience and productivity. I have been asked about - and consciously avoided - expressing these ardently desired outcomes in economic terms. There can be little doubt in Thailand, as in the most industrialised countries of the world, that flexibility in the learner's approach is a crucial condition - in industry and trade as in every other domain of life and livelihood -- for continuing increases in productivity. But the measurement of development is not to be confined to solely economic terms. Nor are many examples of health, education and other community benefits likely to be fully captured, or even comprehended, by purely economic criteria.

Until we recognise that not all human aspirations can be reduced to money terms, we risk failing to value the reality over the surrogate measure. And our smog-laden, global marketplace planet is cutting off the free flow of its creative juices by systematic exclusion in countries like Thailand and regions like Asia of whole categories of people -- the educationally-stunted, the information-poor, the economically-marginalised and the motivationally-reduced -- from participation in the decision-making of development and the opportunity to compete equally for its benefits.

As we prepared to leave Khampralai village, profoundly impressed by the transformation wrought in the community's conditions of life and its burgeoning potential, our deputation of village guides took us to a thatched roof on poles overlooking an older, more tranquil pond. They said that the structure, still in its early stages, was funded by gifts from individuals channelled through the local temple which had helped provide the land (and was by its endorsement adding "merit" to any donations). They described the building as the beginning of a dream: the establishment of a "village university", a place where villagers could discuss all the dimensions of the community's development -- among themselves, and with outsiders come to observe and learn. After four years of work, and of learning while they worked, this was a dream that seemed finally within their grasp.

EDUCATION AND ECONOMIC DEVELOPMENT: SUSTAINABILITY, THRESHOLDS, AND EQUITY

**Michael Heyn
Katrina Lythgoe
Charles Myers**

SUMMARY

The relationship between education and the sustainability of individual livelihoods and national economies is dynamic and complex. "Sustainability" means adjusting successfully and equitably to change, not the static keeping of the same employment and economic structures. Sustainability in this sense depends fundamentally on education and training.

In international research, education has been found to increase agricultural productivity, enhance the status of women, improve child health, reduce fertility, enhance environmental protection, and increase industrial productivity. But the effects found are not linear. Education has little impact until threshold levels of attainment (years of schooling) are reached. Then the effects are large.

The threshold levels for these effects vary with the quality of education. When quality is good the threshold levels of attainment are low. When quality is low, the thresholds are higher. Poor children are least likely to reach the critical thresholds in either case, but particularly when quality is low. If, in addition, females fail to reach the thresholds in greater numbers than males, the negative consequences for sustainability increase. Here, concerns of sustainability and equity coincide completely.

Data from selected countries in Asia/Pacific show that some countries have reached the critical thresholds and others have not. The performance, sustainability, and equity of their economies reflect these differences.

When threshold levels are missed, investment in education has a low social return and a generation of children face limited options and prospects for the future. In such cases, there is urgent need for innovations to increase enrollment, retention and quality. Some of these innovations need to affect demand for education not just the characteristics of supply.

SUSTAINABLE HUMAN DEVELOPMENT

Sustainable human development is development which expands choice, reduces poverty, enhances equity, promotes participation and protects and restores the environment.

Development of this kind clearly meets equity, gender and environmental criteria. And with its emphasis on expanded choice, it is economically efficient as well. For example:

- In agriculture, choice of crops, choice of land use, choice of marketing channels, enhanced choice among farm and household investments due to reduced taxation, etc. improve the efficiency of agriculture and can reduce pressure on the environment.
- Improved choice related to reduced land, labor and capital market rigidities including migration choice, employment choice, expanded opportunity for investment and new business formation, etc. speed the transformation of an economy, the movement of factors of production to higher value added sectors and activities, and away from dependence on natural resources.
- The same set of improved choices, together with greater transparency, decentralization, etc. improve information about choices -- with a consequent reduction of inefficiencies related to information problems, information asymmetries, and incomplete markets.
- Improved education of females, enhanced choice of contraceptive methods and of family size improve current efficiency via enhanced productivity, female labor force participation and increased household savings, and also increase future efficiency as a result of increased investment in children (the quality/quantity trade-off.)

These efficiency arguments are based on the way expanded choice facilitates and reflects the structural changes of successful economies, from natural-resource based to human resource based, from primary products to labor-intensive processing and manufactured exports, from labor-intensive to skill-intensive production and exports, from mid-technology to a high-technology, services, and information-based production.

Clearly, sustainable development is dynamic and proactive. It is not the static keeping of existing employment and economic structures. Development is sustainable only when there is change, and successful and equitable adjustment to change. In particular, what is needed are the "virtuous circles" seen in some countries in East Asia where education has increased choice and economic growth, and reduced inequality; and the increased growth and reduced inequality have -- in turn-- increased the demand for education. (ADB 1997, Birdsall et al. 1995, World Bank 1993)

Clearly, education is central to the process of change, expanding choice, and assuring sustainability.

THRESHOLD EFFECTS

But the relationships are not simple or automatic. In international research, education has been found to have important effects on agricultural productivity, child health, fertility, environmental protection, and industrial productivity. But the effects found are not linear. Education has little impact until threshold levels of attainment (years of schooling) are reached. Then the effects are large.

Agriculture

In international research, four years to six years of education is the minimum threshold found for increases in agricultural productivity. (Foster et al. 1994, Phillips 1994, Jamison and Lau 1983) In some countries, agricultural productivity effects of education occur at up to 8 years of attainment, because of low education quality. (Gray-Molina and Perez 1994) The key is the average number of years of schooling it takes for solid attainment of literacy and numeracy skills.

Literacy and numeracy enable farm households more easily to adopt new innovations, cope with risk, and respond to market signals. These households may also have better access to credit and a better chance of obtaining more secure land titles.

These productivity effects are particularly large when the agricultural sector is innovative and responding to new market opportunities. And the effects are stronger when females reach the threshold in the same proportions as males.

Thai agriculture has been both innovative and market responsive. Longitudinal studies of Thai Agriculture (Siamwalla et al. 1988 and 1987) found that completed primary education of males and females more than any other factor (including irrigation) contributed most to agricultural productivity from 1961 to 1985.

Women's Status, Fertility, Child Health and Education

In international research, six to eight years of education of women is the minimum threshold found for fertility reduction improvements in infant and child health and future educational attainment of children. (King et al. 1993). But in some countries the threshold is higher.

The key is the threshold at which labor market opportunities for women are disproportionately enhanced, significantly increasing the income women can earn in non-household production. The related effects include higher status, enhanced sense of efficacy, later age of marriage, greater success and bargaining power in the "marriage market", greater bargaining power in the household after marriage, smaller desired family size, and high educational and career expectations of children, both girls and boys.

Environmental Effects

There has been less research on environmental effects, other than the relationship between higher education, higher incomes and demand for environmental quality improvement.

But there is one study of the determinants of deforestation in Northeast Thailand (Panayotou and Sungsuwan, 1992) which shows lower secondary attainment (nine years) to be strongly associated with decreases in deforestation. Educational attainment at this level appears to have had two effects: it increased intensification of use of existing land (the agricultural

productivity effect) and it provided off-farm and migration alternatives to land extensive cultivation and deforestation. In other words, attainment of this level seemed to expand options and choices, reducing dependence on deforestation for economic livelihood.

Industrial Productivity and Labor Market Effects

In international research, completion of 9 to 12 years (lower to upper secondary) is the range found for increases in industrial productivity and increased probability of employment in dynamic sectors of an economy. (Blomstrom et al., 1994, Rodrik 1994, Myers and Sussangkarn 1992, Knight and Sabot 1990, McGinn et al, 1980.)

The skills associated with this threshold appear to be good cognitive and thinking skills, trainability, and flexibility to adapt to changing technology. Graduates from academic secondary schools tend to do better in most countries and to be preferred by employers than the graduates of vocational schools, perhaps because some vocational schools do less well on cognitive skills development and trainability. (Middleton 1994, World Bank 1991)

Again, it's best if females attain this threshold in equal or greater numbers. One of the many reasons is that employers often show a clear hiring preference for females for many of the lighter labor-intensive assembly and production operations.

When secondary enrollment lags as it has until recently in Thailand, the future competitiveness of the economy, the distribution of income, even the social contract may be at risk. Many individuals entering the labor force will be below the likely thresholds for formal sector employment and high productivity in industry and services.

A Knowledge-Based Economy

A final "threshold" is associated with the transition to a knowledge-based economy, depending less on imported technology and more on innovation and creativity. This requires a subtle combination of higher education, research and development, life-long learning, and an education system which at every level combines high achievement with the fostering of creativity, critical thinking and analytic skills -- even a bit of eccentricity. At this point enrollment and completion at the secondary level is nearly universal, and the challenge shifts to educational innovation and quality. (UNESCO-ACEID 1997)

QUALITY

Quality, of course, affects all the other thresholds as well. When the quality of education is good, the threshold levels of attainment needed for improved agricultural productivity, women's status, environmental protection, and industrial productivity are lower. When quality is poor, these thresholds are higher.

Good research on school quality and on the determinants of student performance in Asia-Pacific is limited. The issue is also methodologically complex. It is hard to untangle the effects

of innate ability, parental schooling and influence, and time spent in school, from the effects of educational quality.

Many studies show that parental education, especially that of mothers, influences the achievement of school children (Glewwe & Jacoby, 1994; Tan et al., 1997). This is one of the many reasons why there needs to be special emphasis on educational attainment of girls up to the critical thresholds and beyond. It will positively influence the educational achievement of future generations.

Studies of school quality in developing countries suggest that achievement can be affected by the physical condition of the classrooms, classroom resources (such as blackboards, workbooks and textbooks) the quality of teachers (Glewwe & Jacoby, 1994; Tan et al., 1997; Fuller, 1986) the motivation of teachers, good supervision and support, and good communication between parents and teachers. (Carron & Chau, 1996).

The children of low income households face multiple disadvantages. Their parents are less educated, the available schools are of low quality, and time spent in school may be lower because of illness, distance, and high costs. These children, particularly girls, are least likely to stay enrolled long enough to reach the critical thresholds. Here, concerns of sustainability and equity coincide completely.

Staying enrolled, even when quality is low matters a lot. For example, in rural Pakistan there is a huge difference in the level of achievement of boys and girls. The mean score for women aged 20-24 on a test of cognitive skills was only 26 per cent of that for men of the same age (Alderman et al., 1996). However, once attendance in school was controlled for, girls did better than boys, indicating how important levels of enrolment are.

ENROLLMENT AND ATTAINMENT IN ASIA-PACIFIC

In all countries in Asia-Pacific, some proportions of the school age population -- females and males -- reach all the thresholds. But the proportions matter for sustainability, equity, and economic efficiency. The thresholds are not just sequential in years, they are in order of importance for sustainable development. We use data from the UNESCO Statistical Yearbook for 1996, and World Education Report, 1995 to look at enrollment in selected countries in Asia-Pacific.

Agricultural Productivity and the Environment

Most of the selected countries, enroll the majority of their children long enough to reach the threshold at which agricultural productivity effects and some environmental protection effects will occur.

But some South and Southeast Asian countries are exceptions. It is common for children in Bangladesh, India, and Pakistan to enroll only in first level education which lasts for five years, with many, especially girls, only receiving two or even fewer years of schooling. In

Bangladesh for example, of those who did enroll in grade I of first level education in 1991, just 66 per cent attained grade II and only 47 per cent went on to attain grade V. When these countries do reach the threshold will depend critically on the quality as well as the quantity of education.

In Lao PDR, most children will receive five or less years of schooling, and in Papua New Guinea six or fewer years of education is typical. Again, if the quality of education is low it is likely that neither country has reached the threshold required before agricultural productivity effects are seen. The data for Myanmar are less complete, but again suggest a similar pattern, although with less differentiation by gender.

When the majority of children fail to reach even the first threshold, economic growth will be slow and distorted, with persisting poverty and a worsening distribution of income.

Women's Status, Fertility, Child Health and Future Education

At least six to eight years of female education is typically required for enhanced status, reduction in fertility and improvements in infant and child health and future educational attainment.

Levels of education in South Asia are improving, but still in Bangladesh, India, and Pakistan many girls cannot expect to receive two years of education, let alone six or even eight. In Bangladesh for example, the net enrollment ratio for women in 1990 was 66 percent for the five years of the first level, but only 13 percent at the second level. In rural areas the gender gap is often even greater. In rural Pakistan for example, schools are available to only half as many girls as boys (Alderman et al., 1996).

In Lao PDR and Myanmar, most girls will not enter a sixth year of education (net enrollment ratio for Lao PDR in 1993 at the second level was just 15 per cent, and the gross enrollment ratio for Myanmar for women in 1990 was 23 per cent).

When this threshold is missed, current and future development is impaired. Poverty and low educational attainment risk being transmitted from the current generation to the next.

Productivity and Employment Effects

Completion of 9 to 12 years of education is associated with the transition from labour-intensive industries to higher productivity industries and services.

This is a threshold that many of the countries in Asia/Pacific appear to miss, although many are now very close. A little more effort, particularly some innovations on the demand side would have high pay-off for economic growth, sustainability, and equity.

In East Asia, China, the Republic of Korea, and Hong Kong completion of this first stage of second level education is common, corresponding to eight, nine and eleven years of

education respectively. In China few will complete the full ten years, suggesting that China may be just below the threshold.

In the Republic of Korea and Hong Kong; China, however, a majority complete both the first and second stages of second level education (a total of 12 and 13 years respectively). This places both well beyond the threshold required.

Of the South Asian nations, Sri Lanka is the only one close to this threshold where productivity and labor-market effects might be seen. The others lag quite far behind.

Many of the Southeast Asian countries are close to the threshold. Malaysia, The Philippines and Thailand have just missed reaching the required educational attainment, with about half receiving 11 10 and 9 years of education respectively. This is one of the structural explanations for their current economic problems.

IMPLICATIONS: DEMAND-SIDE INNOVATIONS

When the various threshold levels are missed, investment in education has a low social return and a generation of children face limited options and prospects for the future. In such cases, there is urgent need for innovations to increase enrollment, retention and quality. Some of these innovations need to affect the characteristics of education -- the characteristics of supply.

UNESCO-ACEID has been a leader in identifying and promoting innovations to improve the characteristics of education, and improvements in the quality of education are obviously critical. Poor quality reduces attainment for a given number of years, raises thresholds, and increases repetition and drop-outs.

But there has been much less attention to innovations which might increase demand -- innovations which could affect household decisions about enrollment and persistence in school. The implicit assumption of focusing only on quantity and quality of supply is that when there is good quality supply, there will be demand, particularly if the lower levels education are "free". Recent research in South Asia and Southeast Asia suggests that this assumption is not correct.

First, education even at the lowest levels is in fact not "free" even if in principle it is supposed to be. Private costs to households and communities are often quite high, exceeding the government's share, for example, in Cambodia and Vietnam. (CHDR 1997)

Households must often pay a matriculation fee and also pay for instructional materials including texts, note books, writing materials, diskettes, etc.; and costs of smocks and school uniforms, and transportation to and from school. Households may also be required to make various informal payments or "contributions" and/or "fees" for use of laboratories, computer centers, school maintenance, etc. and sometimes directly to teachers to reduce absenteeism and participation in strikes.

Such high private costs discourage enrollment and reduce demand particularly among the poor whose children are at greatest risk of not reaching the critical thresholds in any case. Research in Thailand showed that most poor parents knew that education beyond primary school was important for their children but they couldn't afford it. (Myers and Sussangkarn 1992)

Second, free provision (even when it really is free) does not mean free consumption. Households face an indirect cost of education, or "opportunity cost," equal to the income not earned or the production not done by the family because a child or children are in school. Opportunity costs increase each year and at each level of education as the productive capacity of prospective students increases with both age and education.

The good news is that recent research in the Philippines, Pakistan, and Thailand (Tan et al. 1997, Alderman 1996, Myers and Sussangkarn 1992)) shows that household demand is highly sensitive to modest reductions in the direct cost of instructional materials and transport and to changes which reduce the opportunity costs, for example: changes in the academic calendar or the times of the day or evening when classes are offered. Modest reductions in costs and changes in schedules could increase enrollment and retention and attainment of the critical thresholds.

This has been confirmed in practice in Thailand where targeted reductions of direct and opportunity costs of secondary education have greatly increased the enrollment of rural children from poor households.

Although more confirmation is needed in each country, the research, and the policy success in Thailand suggest that innovations on the demand side could compliment innovations on the supply side and that ignoring the demand side of educational innovation is now no long justified, if it ever was.

REFERENCES

Alderman, Harold, and Jere R. Behrman, Davaid R. Ross, Richard Sabot (1996) "Decomposing the Gender Gap in Cognitive Skills in a Poor Rural Economy", Journal of Human Resources, Vol. 31, No. 1.

Asian Development Bank (1997) Emerging Asia: Changes and Challenges (Manila: ADB.)

Birdsall, Nancy, and David Ross, Richard Sabot (1995) "Inequality and Growth Reconsidered: Lessons from East Asia"
The World Bank Economic Review, Vol. 9, No. 3

Blomstrom, M. and R. E. Lipsey and M. Zejan, (1994) "What Explains Developing Country Growth?" in, W. Baumol et al (eds.) Convergence and Productivity: Cross-National Studies and Historical Evidence (Oxford: Oxford University Press.)

Carron, Gabriel & Ta Ngoc Chau (1996) The Quality of Primary Schools in Different Development Contexts. Paris: IIEP/UNESCO, ISBN

Fuller, Bruce (1986) Raising School Quality in Developing Countries: What Investments Boost Learning? Washington D.C.: The World Bank

Glewwe, Paul & Hanan Jacoby (1994) "Student Achievement and Schooling Choice in Low-Income Countries: Evidence from Ghana"
Journal of Human Resources Vol.29, No. 3.

Gray-Molina, George and Ernesto Perez (1994) "Perfil de Empleo en Areas Rurales de Cochabamba: Analisis de la Encuesta Nacional de Hogares Rurales," La Paz: UDAPSO, Documento de Trabajo, 30/94.

Foster, Andrew and Mark R. Rosenzweig, (1994) "Technical Change and Human Resources and Investments: Consequences of the Green Revolution," Philadelphia, PA: University of Pennsylvania, mimeo.

Jamison, Dean T., and Lau, Lawrence J. (1982) Farmer Education and Farm Efficiency. (Baltimore: Johns Hopkins University Press.)

King, Elizabeth M., and Hill, Ann M., (eds.) (1993) Women's Education in Developing Countries: Barriers Benefits and Policies. (Baltimore: Johns Hopkins University Press.)

Knight, John B., and Sabot, Richard, (1990) Education, Productivity and Inequality: The East African Natural Experiment. (New York: Oxford University Press.)

McGinn, Noel F., et. al. (1980) Education and Development in Korea. (Cambridge MA: Harvard University Press, 1980.)

Middleton, John and Adrian Zideman (1993) and Arvil Van Adams. Skills for Productivity: Vocational Education and Training in Developing Countries. (New York: Oxford University Press, A World Bank Book.)

Ministry of Planning, Royal Government of Cambodia, and UNDP Cambodia, (1997) Cambodia Human Development Report 1997. Phnom Penh, UNDP.

Myers, Charles N. and Chalongphob Sussangkarn (1992) Education Options for the Future of Thailand. Bangkok: Thailand Development Research Institute.

Panayotou, Theodore and Somthawin Sungsuwan (1992) "An Econometric Study of the Causes of Tropical Deforestation in Northeast Thailand." Cambridge, MA: Harvard Institute for International Development, Development Discussion Paper, Number 284.

Phillips, Joseph M. (1994) "Farmer Education and Farmer Efficiency: A Meta-Analysis," Economic Development and Cultural Change, Volume 43, Number 1.

Rodrik, Dani (1994) "Getting Interventions Right: How South Korea and Taiwan Grew Rich," National Bureau of Economic Research, Working Paper No. 4964.

Siamwalla, Ammar et al. (1988) Dynamics of Thai Agriculture, 1961-1985, Bangkok: Thailand Development Research Institute.

Siamwalla, Ammar et al. (1987) Productivity and Competitiveness in Thai Agriculture, Bangkok: Thailand Development Research Institute.

Tan, Jee-peng, and Julia Lane and Paul Coustere (1997) "Putting Inputs to Work in Elementary Schools: What Can be Done in the Philippines?" Economic Development and Cultural Change, Vol. 45, No. 4.

UNESCO-ACEID (1997) Re-Engineering Education for Change: Educational Innovation for Development, Bangkok: UNESCO Principal Regional Office for Asia and the Pacific.

UNESCO (1997) Statistical Yearbook '96, Paris: UNESCO

UNESCO (1995) World Education Report 1995, Paris: UNESCO

World Bank (1991) "Vocational and Technical Education and Training," Washington D.C.: A World Bank Policy Paper.

World Bank, (1993) The East Asian Miracle: Economic Growth and Public Policy, (New York, Oxford University Press.)

World Bank (1995) Priorities and Strategies for Education, Washington D.C.: World Bank.

DISADVANTAGED GROUPS AND EQUITY CONSIDERATIONS WITH SPECIAL REFERENCE TO CHILDREN, YOUTH, AND WOMEN'S DEVELOPMENT

Saisuree Chutikul

Distinguished Participants, Friends and Colleagues :

I wish to thank the UNESCO'S Asia-Pacific Centre of Education Innovation for Development (ACEID), and other organizers for their invitation for me to join in this important meeting. The topic of the Conference is very relevant to our interest and our work. Sharing knowledge and experiences will help contribute to the betterment of the work at hand.

The specific assignment given to me by the organizers is to focus on Disadvantaged Groups and Equity Considerations, with regard to sustainable development, poverty alleviation and quality of life. That is a very tall order in such a limited time, therefore I will have to narrow down my presentation to a few aspects which, I hope, are practical and can be useful in our later discussions.

Who are these advantaged groups ?

The vulnerable and disadvantaged groups include children and youth, or as the UNICEF used to call them children in especially difficult circumstances, such as, child labor, children in commercial sexual exploitation, street children, orphans, neglected and abused children. They also include the drop-outs from formal schooling, children and adults with disabilities, children and adults with HIV/AIDS, drug addicts, and children and youth in poverty.

Other groups are women who have been discriminated against, those who have been trafficked into the undesirable flesh trade and other illegal work, poor women, destitute aged people, illegal or undocumented migrant workers, ethnic minorities such as hilltribe people, or indigenous people who have been deprived of their rights and therefore of their accessibility to various kinds of basic services. The disadvantaged groups also include persons subjects to racism and sexism as well as people subjected to various types of exploitation and oppression.

The fundamental principles underlying the inclusion of those disadvantaged groups into the development process are the belief in human rights, the right to development, the exercise of fundamental freedoms, social justice, working of democratic ways and means, transparency of governance, regard for social, cultural, and religious diversity, respect for equality, and the goodness of harmony and peace.

The attempts to achieve this goal is already reflected in many conferences at the international, regional, sub-regional, national and sub-national levels as well as in international instruments. For instance: the World Summit for Children held in New York, (1990), the World Conference of Education for all, Jomtien, Thailand (1990), the UN Conference on Environment and Development, held in Rio de Janeiro (1992), the World Conference on Human Rights, held

in Vienna (1993), the International Conference on Population and Development, held in Cairo (1994), the World Summit for Social Development, held in Copenhagen (1995), the Fourth World Conference on women, held in Beijing (1995), the International Conference on Children in Exploitative Commercial Sex, held in Stockholm (1996), the International Conference on Child Labor, held in Oslo (1997), and international instruments such as the Convention on the Rights of the Child and the Convention on the Elimination of Discrimination Against Women.

Recommendation : Education

In all these conference, there are more than a thousand recommendations altogether designated for governments, non-governmental organizations, and international organizations. So knowledge on "what" to do is plentiful if one is really interested in the subjects and has time to look at them and take them up.

The problems lie in the questions of implementation, specifically on "how exactly to do it" and "who will do it" within one's own country and within one's own situation and context.

In scrutinizing many proposed solutions to the problems, one area of recommendations has been standing out clearly and has been the main theme for every development problem : that is, the role of education. Education has the widest meaning; it includes formal education, non-formal education and informal education. Education also has various dimensions such as in terms of time, such as life long education, or in terms of means, which includes all possible ways of media and communication, whether they be face to face situation, printing, audio-visual, or electronics, or in terms of space, such as real physical setting or virtual setting.

As we all know, education is not a panacea, but it is one of the important instruments in changing values, attitudes and behaviors. It serves as an entry point in empowering people to reach their potentialities, in alleviating poverty, in enabling an individual for social mobility, in bridging the inequality gap, and in improving one's quality of life. Education works as one of the preventive measures for many social ills and it provides a wider horizon of alternatives whereby constructive choice can be made.

Education is even more important if one considers "sustainable development". UNESCO has defined sustainable development as development that fulfills the current needs of populations without compromising the needs of future generations. I would like to add a more personalized meaning to sustainable development to include "the development whereby a person is empowered to become independent, self-reliant, self-confident, able to seek and develop one's quality of life, and is able to participate actively in decision-making on what will affect one's being, one's future and the future of one's society". Sustainability comes from without and within. It also has implications for the responsibilities of self-continuity, self-direction and self-control as a part of development of oneself and societal development.

Why do we fail to meet the goals of sustainable development with regard to education for the disadvantaged groups and to the question of equity concerns? What are some of these obstacles/impediments?

1) There is a misunderstanding that education is function of the State and its sole responsibility. While we campaign for "Education for All", we have neglected to campaign for "All for Education." The involvement of all sectors and groups is actually crucial and essential, especially when dealing with disadvantaged groups who usually miss out on their education, especially basic education in the formal school setting.

2) Secondly, there is a sense of complacency on the part of those who are given the official responsibility in providing education. (You can read between the lines that I mean the Ministry of Education.) The attitude is "we are already doing the job". On finding out that the enrollment rate is 97 per cent for basic education, no attempt is made to probe into the magnitude and the number of the drop-outs, the reasons behind it, and the solutions to prevent them from leaving school or to bring them back to other types of educational opportunities.

3) Thirdly, coupled with that kind of negligence, the problem is compounded by the attitude that prefers to address education only to the majority of children and youth. It means that to many, the number of the hard-to-reach groups is too small in terms of percentages and numbers to be bothered with or to be worth of being allocated with additional resources.

4) Fourthly, to reach the unreachable, as the word "unreachable" already implies, is an onerous work. It requires special attention and efforts. It also requires new ways and means. The system is used to "sitting and waiting" for the "customers" or the "clients" to come forward so that they can be conveniently provided with services. Proactive approaches in seeking out these unreachable and especially responding to their needs are not quite in the tradition.

5) Fifthly, there is the usual conventional bureaucratic mentality which becomes provincial and which has its weaknesses with consequences such as :

- a) Confinement of work to the routine,
- b) An ineffective system that discourages creativity and initiatives,
- c) Unwillingness to take up any challenges, thus breeding indifference and lack of concern,
- d) Concentration of interest and activities on a lot of paper work and on reports with very little action; e.g. there are plans but no implementation,
- e) Greater emphasis on inputs and less on outputs or performance for educational programmes and projects.
- f) Lack of continuity to follow up and see that good results are obtained, i.e., lack of a monitoring and evaluation systems, lack of organizational memory, and no interest in the lessons to be learned from past experiences,
- g) No accountability to the people. Moreover, in many developing countries, the disadvantaged groups have no voice to reflect their needs and concerns, or if they do speak, their voices are heard by deaf ears. There is also no room for participation.

6) Sixthly there are many misunderstandings with regard to education and the disadvantaged groups as well as equity considerations, such as:

a) The belief that the four-wall formal classroom is the answer to everything. Once we bring the disadvantaged children into the classroom, all the problems are solved.

(I know that such a naive belief should not be possible in this day and age, but it is unfortunate that we still hear such manifestoes from a few who are supposed to be responsible for national educational development.)

b) The emphasis being put on the wrong place. The learning process of the target groups and its style or modes are given less importance while comparatively peripheral aspects are emphasized. It is with the belief that once the latter are achieved, the result will trickle down to better and suitable teaching-learning situations. For example, if the teachers have better salaries, they will automatically teach more effectively to the disadvantaged children who in many cases, actually require different teaching-learning styles, such as that for street children.

c) The misunderstanding that it is better to leave the disadvantaged alone as has happened in the past. If they are encouraged to want more education, the State will not be able to comply with their wish as the resources are limited and should be used mainly for the majority of the people who can contribute more to the society.

d) The disadvantaged are already a burden to the society. They are what they are because they have low intelligence, and insufficient and poor background to learn. They will not become "good" for anything; one out of a thousand may accomplish something. Therefore it is a waste of time.

e) Education is treated as a kind of welfare or a handout; it is given when it is available. Receiving education is not a basic right of an individual, and the disadvantaged can do without.

f) Some people still believe that girls should not receive education as much as boys, or the poor as much as the rich.

g) The constraints within education itself, for example, its incompetence in delivering relevant and meaningful education, its costs, which include direct and indirect costs, which makes education unaffordable, unsuitable teaching-learning environments, etc. these factors actually "push" the disadvantaged children away and they become even more disadvantaged.

Educational Innovations in Action for the Disadvantaged Groups

Despite the obstacles faced, there are many innovative actions in education for the disadvantaged in our region that have proved successful. Innovation, in its widest meaning, may include every action that improves the result of educational efforts. In a narrower sense,

innovation becomes relative. That is, what is already in practice in one sector, e.g. industry, may be introduced as "new" when practiced in another sector, e.g. education, or what is considered "new" in a society or a culture may be already familiar in another society or culture.

Case I: Youth Career Development Program (YCDP)

The Problem: Young girls are at risk with the threat of exploitative commercial sex and child labor. Most of them are very poor and cannot continue their formal education. Many of the girls have already gone into prostitution, especially those from the Northern part of Thailand and the poor hilltribe girls who suffer from additional problems such as lack of living quarters and nationality.

The Objective: To provide economic and social empowerment for young girls at risks.

The Implementors: The Pan-Pacific Hotel, Bangkok in collaboration with UNICEF Thailand.

The Actions:

1) A basic and intensive 5-month training program in the hotel industry which includes flower arrangement, food and beverage, housekeeping, kitchen, laundry and dry cleaning, and English language. All sessions are conducted by the management team of the hotel. The girls are given on-the-job-training by selected department managers.

2) Additional sessions are conducted for these girls. Topics include vital issues such as AIDS education, child rights and protection, and community development.

3) Since 1995 when the Pan-Pacific Hotel launched this program, other hotels have joined under the leadership and coordination of Mr. Douglas Loudon, Executive Assistant Manager of the Pan-Pacific Hotel in Bangkok. The other hotels are Fortune Blue Wave, Grand Hyatt Erawan, The Regent, Royal Orchid Sheraton, Shangri-La, Sheraton Grand Sukhumvit. The Siam City Hotel plans to join the group in 1998.

4) Each hotel provided the girls with a daily stipend of 100 baht, 2-3 meals a day, uniforms and shoes in addition to free training. The UNICEF provided lodging, medical examination, health insurance and additional training as mentioned previously.

Results

1) About 120 girls have benefited from this project. Many girls have jobs in the hotels in Bangkok/Chiangrai, and other provinces. Some have gone back to the village to help train other girls. A few went to work in a factory.

It has been made very clear that while the YCDP does strive to ensure long term social and economic security of its girls, the purpose is not merely to introduce them into a profession but also to provide them with the opportunity to see what the working world is like. They do not have to limit their career goals to the hotel industry but they are opened to undertake whatever they wish to do such as getting more education, or establishing their own business.

It is also very gratifying to learn that these girls can earn a real income and have a better perception of self in terms of self-esteem and self-worth.

2) The Pan-Pacific Hotels and Resorts (PPHR) have 22 hotels in 12 countries. The newest one will be opened in Manila in 1998 and will conduct similar programs for Filipino girls at risks.

3) Through the effort of Ms. Lyndall De Marco, Corporate Director of Education of PPHR, the International Hotel and Restaurant Association, at its Congress held at Amsterdam in November, 1997, endorsed this Youth Career Development Program and committed itself to a partnership with UNICEF Headquarters in New York for an implementation globally. The PPHR will help provide training curriculum a starter kit and other types of educational support.

Observations:

This project is innovative in the following areas:

1) The private sector is the main actor. The private sector helps giving "education" to the disadvantaged not just by giving financial support as is usually done but, more importantly, by providing their expertise and the already available existing knowledge and professional skills of their trade. Active participation of personnel in their company guarantees the success of the project.

2) A coalition is formed between the private sector, the non-governmental organizations and the government. In this case, the PPHR/Bangkok and other hotels do not help these girls by themselves but involve NGO's such as the Daughters Education Programme, the Foundation for Children Development, the Girl Guides Association of Thailand, and the Occupational Assistance Project. The Government also participates, for example, the Welfare School and the Saema Pattana Cheevit Project from the Ministry of Education.

3) Courses in training include relevant subjects which are in the interests of the girls. On-the-job training enables them to be more exposed to practical parts of the job.

Case II: Educational Funds for Girls at Risk

The Problem: Many young girls are very poor and are "at risk" to leave their village to enter prostitution. These are girls who have completed their 6th grade and are about 12 or 13 years old. In many cases their parents would like them to work in the flesh trade because then they can earn some money which they will send them back to their parents.

The Objectives: To provide further education for these girls for another 3 years. When they reach the age of 15 and complete the 9th grade, they can enter vocational schools or vocational training. They also have better alternatives for their choice of works.

The Implementors

There are many projects of similar nature carried on, for example, by the following :

- 1) The Ministry of Education through Sema Pattana Cheewit or Sema Life Development Project.
- 2) Scholarship program by a female member of the House of Representatives from Payao Province.
- 3) The National Commission on Women's Affairs, the Office of the Prime Minister through contributions by DANIDA, the government of Denmark and UNICEF as well as ILO, and individual contributions from Thai citizens through TV campaigns.
- 4) CIDA and USAID assistance to the University of Chiangmai
- 5) The Daughters Education Programme in Chiangrai.

The Action

- 1) The Northern provinces and villages were identified as target areas.
- 2) In the Sema Pattana Cheewit Project, the primary school teachers in those areas were asked to "secretly" observe young girls who were completing grade 6 and who might be "at risks" to enter into prostitution. The district committees were set up to select these girls and they classified them into 2 types of risk levels. Five hundred "very high risk" girls per year were given scholarships to the 19 special boarding welfare schools. All expenses were paid for 3 academic years. The girls in the lesser risk group were sent to the regular schools with a scholarship worth about US \$300 per year, also for 3 academic years.
- 3) The other programs have similar screening criteria. For DEP and DANIDA programs, home visits by volunteers helped identify the girls at risks. Home background included the risk status of parents, e.g., parents who are drug addicts, mothers who were former prostitutes, broken families, or those who live in absolute poverty. In cases where a member of the family had gone into prostitution, the girl is also considered as being "at high risk".
- 4) The DEP and the DANIDA program provides lodging and food for each group of about 15 girls who live in a village. Community leaders, teachers, and religious leaders participate in looking after these girls. They also help give financial, psychological and moral support.
- 5) Education alone in the regular schools is not sufficient to change the attitudes and values of these girls towards prostitution. Development of self-esteem and self-confidence, the understanding of what may be involved in prostitution, the situation of HIV/AIDS and its causes, the implication of the principle of gender equity and human rights, and the understanding of

social/cultural values, etc., are part of the experiences given to the girls. Leadership training is also provided to strengthen their new roles in resisting prostitution.

6) Ten videotapes were carefully produced for them and their parents to aid in their discussion with the teachers on different subjects. Local dialects also were used. Other materials were produced such as a novel called "Midnight" was written by a very famous novelist. This book was designed to be used with parental groups as well as with children for them to read in and out of school.

7) In many provinces, teachers and children attended camps arranged during weekends or during holidays. The purpose of the camps was to establish close relationship between the students and teachers, to provide an opportunity for teachers to learn the students' aspirations and needs, and to give psychological and moral support to students to sustain their attendance at school.

Results

1) In terms of numbers, about 23,000 girls continued their education at the lower secondary level out of this programme. After government and NGO's vigorous campaigns, changes of laws and regulations which formerly barred children without birth certificate and house registration number from entering school, social mobilization and the provision of scholarships and funds, an increasing number of disadvantaged children continued their education beyond grade 6. Nationally, lower secondary school enrollments increased from 63 per cent of this age group, i.e., age 12-14 years, in 1994 to 77 per cent in 1997 and is expected to reach 84 per cent during the next school year, if the economic downturn does not pull the children back again.

2) These girls were successfully discouraged to enter into prostitution. Most of them still are in school with a very small percentage of drop-outs. Evaluation is being conducted on some of these projects.

Observations:

The success of these projects depends on the following:

1) The recognition by the Thai Government of the significance of the role of education in combating prostitution for children. Resources were allocated and personnel were assigned to be responsible for the project.

2) The significant contributions of external outputs, especially from international organizations and foreign governments.

3) The collaboration among the local teachers, religious and community leaders, and NGO and GO personnel with the determination to help the girls.

4) Many new learning-teaching modes were used.

5) Sustainability lies in the continuity of commitment and action. These projects will attempt to expand to cover the whole country, not only for the children who are at risk for prostitution but also for other types of intolerable child labor.

Case III: Community Participation in Basic Education

The Problem: Child labor is a problem especially in the Northeastern part of Thailand where most of the poor people come from. Buriram is one of poorest provinces in the Northeast where people migrate from the rural to the urban areas for work.

The Objectives: To promote community's participation in preventing children from migrating to urban areas for jobs and to develop curriculum and instruction which emphasize community participation.

The Implementors: The Office of the National Education Commission, as a coordinator, the community of District Lam Plai Mart, Buriram, the National Primary Education Commission and local primary schools and teachers, with the assistance from the UNICEF.

The Actions: Dek-Hug-Tin Project is a community initiated project run by a local leader named Pai Soisaklang, who is much respected by villagers and the teachers. Dek-Hug-Tin literally means "children love their home town." Originally the project aimed at laying a strong foundation for the spiritual and mental development of children and youth but later on, the scope was extended to incorporate concern for child rights issues, including child labor.

It was recognized that migration may not be stopped. What best could be done was to prepare the children to know how to think, to work and to survive before they leave their homes. Also, there is a need for the children to learn to appreciate their local history and culture.

1) Special classes out of school were organized and both Pai and other villagers took time to help children learn about local history, culture, environment and farming practices.

2) Vocational training was also provided to expose children to the world of work.

3) Study trips were organized for the children and their parents to local areas to visit work sites. The trips incorporated activities to promote moral and ethical development, to promote understanding about job alternatives and job opportunities.

4) Curriculum development which was suggested by the community, included contents related to local jobs and occupations, religious principles, local history, local culture, family lineage and connection among families in the community and current issues analysis to promote critical thinking.

The curriculum development enlisted the participation of school administrators, teachers, local leaders, district education officers and other local resource persons. Educational materials also were developed.

5) Establishment of "community store" which local youths learned to operate. On-the-job training was provided. Other children then learned about the operation and were able to see more job opportunities in the village.

Results:

1) Children are more inclined to seek jobs in their locality. School learning become more relevant to the needs of the local people. The parents appreciate the study trip activities.

2) The Department of Curriculum and Instruction, Ministry of Education is studying this project as a model for local curriculum development to be expanded elsewhere.

3) The "community store" practically becomes the village "youth center" where young people spend their free time; the number of children who are drug addicts or smokers showed a declining trend.

Observations:

1) The community's initiative and participation contribute to the project's sustainability.

2) Coalition is formed among the community leaders, teachers and administrators, parents and children.

3) The "officials" are responsive to the needs of the community, which is something new.

4) People recognize the importance of education because it has relevance to their life and activities, and want to be a part of educational process.

What can enhance the goals of sustainable development with regard to education for the disadvantaged groups?

1) The true political will and commitment, as opposed to only verbal statements at international meetings, must be in the form of allocation of resources for education for the disadvantaged groups on a continuing basis.

2) There must be a national policy and national programmes of action for education aimed at groups of the disadvantaged, as clear targets, and which mainstream the disadvantaged in the educational development process.

3) Diversity of modes of delivering educational services to the disadvantaged must be sought. Innovations are created and encouraged. Allocation of funds for special or pilot innovative projects should be provided.

4) Eradicate the bureaucratic mentality that obstructs the development of education and instill in the system serious concern and care for the disadvantaged.

5) Encourage the people who are responsible for education and educational development to look for the seemingly "impossible" actions to reach the unreachable; legal considerations should be taken such as revision of laws, rules and regulations to facilitate such actions.

6) Recognize the critical roles of teachers and school administrators in the formal school system who, with their dedication and direct involvement, can make "a difference" in the life of the disadvantaged.

7) Allow the NGO's and the private sector the freedoms to operate educational programmes by trusting their expertise and encourage them to sustain and expand their programmes by various means.

8) Community involvement, ownership and participation are the basis for sustainability in any of the undertaking at the local level. Community initiatives are encouraged.

9) The collaboration among many actors to create synergy, including the disadvantaged themselves.

10) Improvement of the quality of educational services so they will not become the "push" factors driving the already disadvantaged into worse situations. The urgent need, for example, is for teaching-learning methods and environments.

11) Education innovations for the disadvantaged may require support services for their sustainability, for example, counseling services, family development programmes including parenting education, co-curricular activities, etc. These should be included in the considerations.

12) The international community can play a very significant role in supporting innovative projects, help document them and share information and lessons learned among those concerned.

**WOMEN AND GENDER-RELATED CONSIDERATIONS
A KEY ISSUE AND CONCERN IN
EDUCATION INNOVATION FOR SUSTAINABLE DEVELOPMENT**

Savitri Suwansathit

I am happy that the topic of "Women and Gender-related Considerations" has been included as a key issue and concern under the overall theme of this International Conference on Education Innovation for Sustainable Development.

At the dawn of the twenty-first century, and as we prepare to celebrate the 50th Anniversary of the Universal Declaration of Human Rights next year, we should, not only recall the principles of equal rights and inherent human dignity of men and women, but should also reaffirm that it is the responsibility of the present generation to protect and promote the interests of the generations to come, particularly by ensuring equitable and people-centred sustainable development through education.

In this context, the human dimension of sustainable development has been emphasized. It is therefore very important to search for holistic and innovative approaches to ensure that all members of society can fully and effectively participate in and benefit from that sustainable development.

What is Sustainable Development?

The UN agencies have defined sustainable development as a development that serves the needs of the present generation without compromising those of the future generations.

To many, myself included, sustainable development is a development which does not generate further injustice, further marginalization, exploitation, violence, and inequality, of any kind, and at any level.

It must be a development, conceived in both social and human terms, aimed particularly at improving the quality of life of all sectors of population, combating poverty and exclusion, protecting the environment, and most importantly, building the innermost human capacity for mutual respect, tolerance, cooperation and peaceful coexistence.

At present, sustainable development and peace, have become a goal and an ideal which no one or no society can deny, and human development has been globally accepted as being at the centre of it all. It is therefore indisputable that women, as half of the world human population, must be adequately educated and encouraged to become active, effective and equal partners in achieving such a goal.

The development and advancement of women, and the achievement of equality between men and women should be seen as a condition for human rights, social harmony

and sustainable human development. It should be the concern of all sectors in society, and should not be regarded in isolation or in segregation as a "women issue".

During the past decades, the international community has already attached great importance to the women and gender-related issues as an integral and essential part of the "development reconsideration", as exemplified by the four international conferences on Women and Development, the last of the series being the Beijing Conference which adopted the Beijing Declaration and the Platform for Action for Equality, Development and Peace.

Other major world conferences, such as the Jomtien Conference on Education for All (1990), the World Summit for Children in New York (1990), the World Summit on Environment and Development in Rio de Janeiro (1992), the World Conference on Human Rights in Vienna (1993), the Cairo Population Conference (1994), the World Social Summit in Copenhagen (1995), and the World Conference on Adult Education, Hamburg (1997) all stressed the important link between the development of women and gender equity, and sustainable development.

What are the present constraints and obstacles?

In all parts of the world, much progress has been made in the last two decades, notably, reduction of infant and maternity mortality, improvement of nutrition, increased life expectancy, increased female school enrolment and female adult literacy. However, there are still many obstacles which need to be addressed.

At present, poverty remains one of the most humiliating problems of the world, as more than one billion of people live in unacceptable poverty with women being the majority of them. Poverty, and particularly the burden of poverty on women, is indeed a complex and multidimensional problem. Its eradication cannot be accomplished through anti-poverty programmes alone, but definitely requires democratic participation by all. It also requires changes in social and economic structures.

In order to eradicate poverty and achieve sustainable development, women must participate as fully and equally as men, to ensure sustainable livelihood, combat hunger and malnutrition, ill health, lack of access to education and training, unsafe environment, and social discrimination and exclusion.

Illiteracy and the lack of lifelong learning opportunity are fundamental impediments for women, as 2/3 of the world illiterates are female, and 1 out of 13 female adults in the world cannot read or write.

It is crucial that the world community must target female illiteracy and commit itself more seriously to removing obstacles which bar women's equal access to quality basic education, as well as to further knowledge and new information at all stages of life. This is in line with the objectives of lifelong education which aims at developing the autonomy and

the sense of responsibility of all members of society, and enhancing their capacity to deal with the rapid transformations in society as well as facing the challenges ahead.

Women's health, both physical and mental, is an issue which requires a broad and holistic approach, since women's health affects the health of their family, particularly the children. Women's health issue, especially sexual and reproductive health, is also related to the problem of women's education and their social and political rights and status. The specific needs of women and girl adolescent to participate in primary health care and sexual and reproductive health care programmes, peer education and outreach programmes, therefore, must be recognized and responded to, in order to reduce the vulnerability of girls to HIV/AIDs and other sexually transmitted diseases, and to promote parental role in the care of family's health.

Violence against women, be it physical, sexual, or psychological, is another matter of serious concern. This is a direct violation of human rights, instilling fear and insecurity in women and their children, and perpetuating the culture of violence in the family, in the community, and in society. The absence of adequate research and study, the lack of data and statistics on the incidence of violence against women and children, particularly girl-children, make it difficult to monitor and solve this complex and long-standing problem facing women and girl children in all parts of the world.

Women and the economy is another area for reconsideration. Insufficient attention to gender analysis makes women's economic contributions and concerns unappreciated, underestimated, and ignored in economic structures, labour markets and financial institutions. There are also various problems arising from lack of access to education and training, discrimination in hiring, remuneration, promotion, and horizontal mobility, as well as inflexible working conditions, which continue to restrict women's opportunities for employment, mobility and advancement. The lack of adequate encouragement and the inability of women to organize and to learn collectively as women's group, to gain access to credits and to power structure, are also serious constraints. Thus women's potential for contribution to the overall economic development is still vastly limited and needs to be further strengthened.

Education is the key to human sustainable development

All the major international conferences held in the past decades have stressed that education is vital in the nurturing of human competence and creativity, as well as in promoting sustainable development. Education is seen not only as a right, but also a duty of individuals and of the society. Women, in particular, have a right and a duty to learn, and to continue to access themselves to further knowledge and new information. Society, in turn, stands to gain from women's educated and informed decisions, since society also depends on women's contribution in all areas of work and life.

As mentioned before, illiteracy and the lack of continued and lifelong learning opportunity are major obstacles to women's development. In many parts of the world, girls and women's lack of access to education is due to the following reasons :

- discrimination due to customary attitudes;
- marriages and pregnancies;
- inadequate and gender-biased teaching and educational materials;
- sexual harassment;
- work of girl children at home;
- early drop out due to lack of encouragement;
- lack of understanding of job opportunities and broader choices in life.

What are some of the innovations needed?

There have been various recommendations from all the previous international conferences which addressed the issue of women and development as well as gender equity. Below are some points which are relevant to our consideration at this meeting. They call for innovations at various levels:

1. Creation of an educational and social environment in which men and women, boys and girls, are equally treated and equally encouraged to achieve their full potential.
2. Development of curricula and teaching materials which promote non-stereotyped images of women and men, and are not gender-biased. Science and technological curricula and textbooks, in particular, should promote opportunities for full and equal partnership in society.
3. Allocation of special budgetary resources which aim at increasing enrolment and retention rates of girls, particularly in villages where girls' enrolment rate is notably low and their drop-out rate particularly is high due to social and economic reasons. Support of the parents and the community must be enlisted to achieve the objectives and goals set out in the special budgetary allocation.
4. Elimination of all barriers to schooling in case of pregnant adolescents and young mothers. Appropriate, affordable and physically accessible child-care facilities and parental education should be provided to encourage those who are responsible for the care of their children and siblings during their school years to be able to continue and complete schooling.
5. Training and retraining of male and female educators, school administrators and teachers to be gender-sensitive and to be role model for the elimination of discrimination against girls' and women's education, as well as for the promotion of equal treatment and participation of girls and boys in decision-making at all levels.

6. Making available non discriminatory and gender-sensitive professional school counselling, health-care education and career education programmes, particularly for girls, to provide them with adequate understanding of female health issues as well as to encourage them to have a broader career choices and opportunities.

7. Partnership with the mass media which are a powerful means of education to provide airtime and space in their media for the promotion of the understanding of women and gender-related issues and concerns, and for the advancement of women as a condition for sustainable human development.

8. Promoting life-long learning for women of all ages and encouraging women to promote their leadership and to create women's groups and organizations in order to enhance their effective contribution to society.

9. Promoting women's sustained ability and opportunity for participation in decision-making processes in all formal and informal structures.

10. Supporting and developing gender studies and research at all levels of education, as well as in all related fields.

Education in Thailand : Some Women and Gender-related Concerns

Following Jomtien, basic education in Thailand has been expanded from 6 years of compulsory education to 9 years of education for all, paving the way for 12 years free education for all to be implemented in the near future in accordance with our 1997 Constitution. Quality of education is however a cause for a major concern, and quality assurance measures are being considered for nationwide implementation.

There has also been a rapid expansion of pre-school education throughout the country over the past years. It is believed that the number of boys and girls enrolled is approximately equal, and it is hoped this early preparation for education, combined with nutritious school meals and parenting education, will benefit disadvantaged children.

Thailand has also succeeded in significantly reducing the national rate of illiteracy, from 18.2 per cent in 1970 to 10.5 per cent in 1980 and 7 per cent in 1990. Female literacy (91.3 per cent) is lower than male (94.7). Women constitute about 62 per cent of the country's illiterate population, but this figure reflects the historical situation among older women who were offered less access to education during their youth, rather than any current discrimination.

Access

Broadly speaking, girls and women in Thailand have equal formal access to the same schooling and curricula as boys and men. The majority of schools in Thailand are co-educational, and the few single-sex government schools are approximately evenly matched in terms of numbers of girls' schools and boys' schools.

Data on the level of participation of boys and girls at all levels of schooling confirm equal educational opportunities for girls. See table 1 below:

Table 1: Participation in Schooling of Boys and Girls				
Educational Level	Academic Year 1991		Academic Year 1993	
	Women %	Men %	Women %	Men %
Pre-elementary	48.7	51.3	49.08	50.92
Elementary	48.98	51.86	48.95	51.05
Lower Secondary	48.14	51.86	48.95	51.05
Upper Secondary	48.99	51.01	49.4	50.6

They also enjoy equality with men in terms of educational achievement (see table 2).

Table 2: Graduates from Public Universities (1993)			
Degree	Women	Men	Total
Bachelor's Degree	28,755 (53.85%)	24,642 (46.14%)	53,397
Grad. Diploma	409 (43.28%)	536 (56.72%)	945
Master's Degree	3,238 (46.84%)	3,674 (53.15%)	6,912
Doctoral Degree	46 (44.23%)	58 (55.75%)	104
Total	32,448 (52.58%)	28,910 (47.12%)	61,358

There are however still several areas to which women are denied access. These are the military and police schools and academies, and the Buddhist universities, which serve only male monks.

Career and Vocational Guidance

Specialist career and vocational guidance is primarily offered in secondary schools in order to assist students in choosing a career or study path. However, primary influence on students' choice of study subject or work remains to be the family. In the urban middle class, this might start from early school years, with parents placing their children in schools well-known for successfully preparing students for certain particular fields. Families are generally a conservative influence, tending to direct boys and girls towards traditional gender-stereotyped work or study areas.

Stereotypes

Stereotypes about the role of male and female both in education can be found at a very early level. For example, textbooks and illustrations at primary education level convey a message that men and women have different and fixed roles. For example, men are mostly portrayed as the leader or administrators in the community, and as family breadwinners, and women as housewives, cooks and child carers, and as supplementary income earners.

The Department of Curriculum and Instruction Development is now reviewing these textbooks.

There is no available information on the choice of subject in secondary schools, but considerable gender stereotyping is evident in the choices of male-female subject of study at the tertiary level, as shown in Tables 3, 4 and 5 below.

Table 3: Fields of Study at Public and Private Universities (1991)		
Field of Study	Women	Men
Humanities, Religion	5,807	4,417
Law	1,332	4,832
Social Science	23,047	11,764
Natural Science	1,670	1,570
Engineering	368	6,991
Agriculture Forestry and Fishery	1,068	1,880

Table 4: Graduates from Public Universities in Selected Social Science (1991)		
Field	Women	Men
Psychology	158 (79%)	42 (21%)
Economics	1,041 (57%)	791 (43%)
Business Administration	9,041 (70%)	3,939 (30%)
Political Science	1,634 (42%)	2,223 (58%)
Home Economics	518 (98%)	120 (2%)

Table 5: Enrolment in Formal Vocational and Technical Education Programmes (1992)		
Programme	Women	Men
Industrial Mechanics	4,013 (3%)	141,561 (97%)
Arts and Crafts	3,751 (46%)	4,342 (54%)
Home Economics	15,097 (97%)	409 (3%)
Commerce	71,229 (90%)	8,258 (10%)
Agriculture	2,079 (20%)	8,157 (80%)

Female Drop-out Rates

Although the general rate of drop-out beyond compulsory education is very high, the rate is approximately equal for boys and girls except for some villages in the North of Thailand. There has however been considerable concern about the fate of girls leaving school after primary level, particularly in 9 provinces in the upper North. A number of preventive and intervening measures have been introduced, particularly the provision of scholarships and safe accommodations for girls who are considered "at risk" (e.g. broken home, drug-related family, relatives as prostitutes.) A large number of government, private and NGO's scholarships and boarding facilities are being provided to enable them to continue their education and to broaden their choices of job opportunity.

Family-planning programmes In Thailand, family and sex education is offered in secondary schools. Its effectiveness in addressing issues of emotions and relationships has been doubted, although it is believed to be reasonably valuable in providing biological information, as a 1988 study showed that approximately three-quarters of young people received no information from their parents about sex and family-planning. Lack of basic information in this area has been identified as a negative element leading to HIV/AIDS among youth, and adults, particularly women.

A Story of two Thai women

I have a story that I want to tell you though time may not permit it. Last weekend I went on a family vacation to Kanjanaburi. My brother-in-law's family also joined us. As we travelled in a micro-bus, we were able to give a ride to the wife of a man working at our project in Kanjanaburi. She came from Chaiyapoom in the Northeast, was 18 years old, and was eight-month pregnant with her second child, while her first son was only two years old. She was currently working with her mother-in-law in Bangkok and her husband visited her whenever he could. She was very thin and small for her age. Upon interviewing her, I learned that six months after the birth of her first son, her own mother gave birth to a daughter, and she had to breastfeed both her own and her mother's babies because her mother was ill. Her husband was also 18 years old and had no knowledge of contraception. Both her husband and she received only six years of education and they had no long-term plan for their future. She had no understanding of HIV/AIDs and had so far taken no precaution.

Riding at the back of the same mini-bus was my own niece who also happened to be 18 years old. She received the benefit of the best education that Thailand can provide, attending the Chitralada School within the Chitralada Palace, and was currently in her third year of the Faculty of Commerce of Chulalongkorn University. I was happy to notice that both my niece and the girl from Chaiyapoom were very friendly and compassionate with one another during the ride to Kanjanaburi and back to Bangkok. I hope they had the opportunity to learn from one another and to find a way of helping as two women whose lives are so different and yet their paths have crossed. I am certain that the same kind of disparity and problem exist in every society of the world. The important question is whether or not one learns from one another, and whether or not one acts to improve the situation.

Conclusion

Before ending my presentation, I would like to stress, once again what I have earlier indicated at the beginning of my paper, that the development of women and the achievement of gender equity must not be seen in segregation as "women issue" but should be a part and parcel of the larger movement of participatory democracy, partnership, cooperation and sustainable development. In this globalized age, the issue is also very complex, dynamic and changing, and it has become the global concern of all sectors in the society, and in all countries in the world. It can be a personal or private problem, but it is also a social and public concern as well. It pervades all aspects of life and has wide-ranging implications.

The ultimate goal, however, must be to move towards greater and happier partnership, tolerance and happy coexistence between men and women for the sustainability of the future of humankind.

★ ★ ★

References

- Thai Educational Statistics, 1996.
- The Jomtien Declaration, 1990.
- The Eighth National Economic and Social Development Plan, 1997-2001.
- Beijing Declaration and Platform of Action, 1995.
- Hamburg Declaration and the Agenda for the Future 1997.
- Thailand's Report on the elimination of Discrimination against Women, Office of the National Primary Education Commission, 1996.
- Women Development Plan, under the Eighth National Economic and Social Development Plan, 1997-2001, Thailand.

***Third UNESCO-ACEID International Conference
Educational Innovation for Sustainable Development
1-4 December, 1997***

**Environmental Issues and Considerations
Affecting Sustainable Development in the Asia-Pacific Region**

Suvit Yodmani

Introduction

The Asia and Pacific region extends from Mongolia in the north to New Zealand in the south and from the Cook Islands in the east to Iran in the west. It embraces the world's largest ocean, the Pacific, as well as the third largest ocean, the Indian, and a range of important seas. It contains three of the largest and most populous countries in the world (China, India, and Indonesia), several mountainous and land-locked states (such as Bhutan and Nepal), and 22 small archipelagic states, territories, and protectorates. With only 23 per cent of the world's total land area, the region is home to about 58 per cent of the world's population.

The economies of this region have witnessed high growth rates in the recent past; in 1994, the total GDP growth was 8.2 per cent. Despite this, poverty persists. Estimates indicate that, of the world's 1.2 billion people who live in absolute poverty (with a per capita income of less than US\$1 a day), more than two thirds reside in this region. High population growth is exerting pressure on the environment and on natural resources. Urbanization and industrialization have also had deleterious impacts, leading not only to high pollution loads but also social stress.

The major environmental concerns vary widely across the region but the major issues include;

- land degradation
- deforestation coupled with loss of biodiversity

- declining availability of fresh water and deteriorating water quality, and
- the degradation of marine and coastal resources.

The general recognition in the region is that deforestation, inadequate water supply, and water quality need to be addressed on a priority basis.

In the large megacities of the region, such as Bombay, Bangkok, Jakarta, and Manila, air pollution is an increasingly serious problem. The small island states such as Fiji, Maldives, and Western Samoa are grappling with solid waste disposal problems with irregular and inadequate disposal facilities. Furthermore, the burden on women resulting from environmental degradation needs to be recognized. Women are the primary natural resource managers in developing countries of Asia and the Pacific, yet this important role is often ignored by governments and agencies. They do most of the work to reap food and fuel from the environment to sustain their families. When the environment is degraded, it is the women who first feel the crunch.

In summary, the Asia-Pacific region is today the fastest growing region in the world. It is also the largest region in the world, carrying more than half the world's population. It contains a large and diverse range of ecosystems, including deserts, forests, rivers, mountain ranges, lakes and the Indian and Pacific Oceans. The forest cover in Asia is the second largest in the world. Two thirds of the world's coral reefs and one third of the world's mangroves lie within the region. These constitute a major reservoir of the Earth's natural resources, and present a daunting challenge to countries in the region to ensure their sustainable use, conservation and environmentally sound management against the backdrop of their development imperatives.

Principal Environmental Challenges

Population growth and unsustainable patterns of production and consumption are the key driving forces that threaten the environment. The resultant pollution and natural resource degradation have in turn a negative impact on human health and welfare as well as nature itself. Most of the causes of environmental degradation and their effects are contained within national borders. However, some of these causes and effects, like energy consumption patterns and deforestation, utilization of certain chemicals and marine pollution, have a negative impact on the global atmosphere and oceanic commons and on shared natural resources in regions. Furthermore, the globalization of the economy, including trade policies and financial flows, may exacerbate environmental changes which take place around the world.

The intensified and unsustainable demand for land, water, marine and coastal resources resulting from the expansion of agriculture and uncontrolled urbanization lead to increased degradation of natural ecosystems and erode the life supporting systems that uphold human civilization. Caring for natural resources and promoting their sustainable use is an essential response of the world community to ensure its own survival and well-being.

The utilization of inappropriate technologies, and the widespread adoption of unsustainable production and consumption patterns, lead to high waste yields, are inefficient in the use of renewable resources, and wasteful in the use of energy. The resultant pollution and natural resource degradation have in turn a negative impact on human health and welfare as well as on nature itself. As the world population grows and resources are taxed beyond their carrying capacity, societies, particularly the affluent must strive to establish an improved rationality in their consumption patterns and to move towards the adoption of low waste, energy efficient technologies.

Environmental changes and human behaviour result in the prevalence and increase of hazardous chemicals and toxic wastes in the environment of burgeoning and deteriorating urban areas, and of increasing risk of waterborne and other diseases of environmental etiology. Such changes also have adverse effects on economic productivity, health and social welfare, including the exacerbation of the negative effects of natural disasters on the poor. The relationship between environmental degradation and pollution and human health and well-being must continue to be understood at its root cause and preventive measures should be strengthened to mitigate negative environmental and social impacts.

The globalization of the world's economy, international communications, the liberalization of trade, the adoption of worldwide unsustainable consumption model coupled with the absence and uneven application of world wide standards, widespread external debt and the increasing threats to the atmospheric and oceanic commons - all argue for global approaches to understand the relationship between trade and economic policies and the environment, and for the establishment of global and regional accords and policies to respond to environmental challenges on a planetary scale.

UNEP has a major responsibility to identify and assess environmental issues of common concern, alert the world community to these issues, induce their resolution through international cooperation and provide policy guidance for the direction and coordination of environmental programmes within the United Nations System.

UNEP's Responses

A special session of the UN General Assembly was held in late June of this year in New York. Governments, environmental organizations and others gathered at the UN Headquarters for the "Earth Summit Plus Five", a special session of the General Assembly held to review and appraise where the world stands in realizing the goals set out five years ago at the Earth Summit in Rio- otherwise known as the UN Conference on Environment and Development (UNCED). The meeting also marked the 25 years which have passed since the UN Conference on the Human Environment was held in Stockholm. It was following this conference that UNEP was created.

In assessing progress since UNCED, the General Assembly agreed that education increases human welfare and is thus a decisive factor in enabling people to become productive and responsible members of society. Thus a fundamental prerequisite for sustainable development is an adequately financed and effective educational system at all levels. The core themes of education for sustainability include lifelong learning, interdisciplinary education, partnerships, multicultural education, and empowerment.

The General Assembly noted that, even in nations with strong education systems, there is a need to reorient education, awareness and training to increase widespread understanding, critical analysis and support for sustainable development. Education for a sustainable future should also engage a wide spectrum of institutions and sectors, including but not limited to business/industry, international organizations, youth, professional organizations, NGOs, higher education, government, educators and foundations.

Further to that point, the General Assembly made special note that it is necessary to support and strengthen universities and other academic centres in promoting cooperation among them, particularly between those from developing and developed countries. This recommendation, along with many others, was in response to the General Assembly concluding that, five years after UNCED, the state of the global environment continues to deteriorate. This is documented in the Global Environment Outlook 1997 prepared by UNEP and published this year.

Some progress has been made in terms of institutional development, international consensus building, public participation and private-sector actions. As a result, a number of countries have succeeded in curbing pollution and slowing the rate of resource degradation. Overall, however, trends are worsening. Many polluting emissions, notably of toxic substances, greenhouse gases and waste, continue to rise. In some industrialized countries emissions are, however, decreasing.

Marginal progress has been made in addressing unsustainable production and consumption patterns. Insufficient progress has also been identified in the field of environmentally sound management and adequate control of transboundary movements of hazardous and radioactive wastes. Many countries undergoing rapid economic growth and urbanization are also experiencing increasing levels of air and water pollution, with accumulating impacts on human health.

Acid rain and transboundary air pollution, once considered a problem only in the industrialized countries, are increasingly becoming a problem in many developing regions. In many poorer regions of the world, persistent poverty is contributing to accelerated degradation of natural resources. Desertification has spread. In countries seriously affected by drought and or desertification, especially those in Africa, their agricultural productivity, among others, is uncertain and continues to decline, thereby hampering their efforts to achieve sustainable development.

Inadequate and unsafe water supplies are affecting an increasing number of people worldwide, aggravating problems of ill health and food insecurity among the poor. Conditions in natural habitats and fragile ecosystems, including mountain ecosystems, are still deteriorating in all regions of the world, resulting in diminishing biological diversity. At the global level, renewable resources, particularly freshwater, forests, topsoil and marine fish stocks continue to be used at rates beyond their viable rates of regeneration; without improved management this situation is clearly unsustainable.

Given this, we have no option other than to rapidly implement the process of long-term sustainable development as defined by the Earth Summit's Agenda 21. The definition of sustainable development which I use often is the one which appeared in the 1992 issue of *Nature and Resources* which locates the source of development goals at the level of individuals and communities. It states:

"Sustainable development is a process focused on people and societies: how they define needs with reference to their own goals and the goals they share as members of communities and nations. It is in stark contrast to development approaches that have focused on resources for exploitation as a means of short-term wealth generation. It also casts doubt on measures of economic performance that assume social goods automatically follow economic development and that environmental consequences can only be tackled after the fact."

Since UNCED, many meetings and other events have reaffirmed the importance of sustainable development. While political reaffirmations remain important, such generic statements did not emphasize sufficiently the critical nature or the urgency of the issues. The

special session of the General Assembly saw parties and stakeholders in sustainable development not only reaffirm the commitments made at Rio, but pledge to honour these commitments in tangible ways. Hopefully we have seen the beginnings of a bridge being built between the North and South, along with a real commitment to sustainable development.

UNEP has acquired a wealth of expertise and experience in a number of key areas relating to the environment, in the quarter of a century since UNEP was established following the Stockholm Conference held in 1972. From the very beginning UNEP advocated a system of interacting relationships that extend through all sectors of activity and an integrated approach to environment and development. UNEP has therefore sought and continues to seek partnerships with other Agencies and bodies within the United Nations system as well as with other inter-governmental and non-governmental organizations, which possess complementary knowledge, skills and delivery capabilities. We are also making a particular effort to enhance the participation of the public and private sectors, the academic and scientific communities, youth, women and other community groups in our work. This participatory approach, so essential for work in the area of environment and development, has on the one hand helped to avoid duplication of effort and resources, and on the other, made the programmes more effective and needs-responsive.

UNEP has built up strong partnerships with bodies such as the Asian Development Bank (ADB), International Centre for Integrated Mountain Development (ICIMOD), Association of South East Asian Nations (ASEAN) Secretariat, Mekong River Commission, South Asia Cooperative Environment Programme (SACEP) and the South Pacific Regional Environment Programme (SPREP).

The second strategic element of UNEP's programme is regional delivery. The benefits of regionalisation of UNEP's Programme are self-evident. It provides for more realistic and balanced assessment of needs, more reliable regional inputs to global environmental sensing and assessment, greater cost-effectiveness of programmes, enhanced monitoring capabilities, mobilization of partners at regional and national levels so essential for effective programme delivery. Closer collaboration with regional and national bodies have inspired several creative and innovative programmes in the Asia Pacific region some of which would be of particular interest to this august audience.

As you know, UNEP completed the first Global Environmental Outlook (GEO) earlier this year. The report received wide publicity and praise from governments for its substantive content, regional orientation and the global environmental outlook that the report pointed to. Building on the success of GEO I, UNEP has now embarked on the preparation of GEO II. Some twenty specialized collaborating centres, including six from Asia and the Pacific will make contributions to the report.

Industrialization, as you well know, is the backbone of the rapid economic growth of countries in the Asia-Pacific region. Many difficult and challenging environmental problems have arisen in the region transcending national boundaries, in areas such as air pollution and acid rain, energy related problems, growing demands on exploitation and use of natural resources, and the generation and safe disposal of industrial hazardous wastes. These are all high priority areas of UNEP's programme of work in the region.

Several initiatives have been taken to address these. For example, an initiative was taken in Beijing and Beihai, one of China's Industrial cities in the South East of the country, with the participation of senior officials from the eight rapidly industrializing countries to share each others' experiences in the strengthening of the industrial management regimes to meet this growing challenge. Then very recently, yet another initiative was taken to bring together the management of the Industrial Estates in countries in the Asia Pacific region so that they could learn from each other and through experts in the field from the industrialized countries, ways and means of managing the ever increasing investment in primary and manufacturing industries in countries in the region.

Another innovative step recently taken by UNEP's Regional Office for Asia and the Pacific is to organize, in partnership with perhaps the most prestigious post-graduate institute on technology in the region - the Asian Institute of Technology in Bangkok, Thailand, a course on Applied Environmental Management, conducted by the professional staff at the regional office. Among the subjects covered in this Post-Graduate course are, Environment and Industry, Environmental Law, Environmental Education and Training, Environmental Communication, Environmental Assessment and Environmental Economics.

One of the most difficult areas requiring urgent attention is the strengthening of the implementation of environmental regulation in countries in the region. Most of the countries have taken significant steps to reinforce their legal and institutional regimes in the years following UNCED, and UNEP can take some justifiable pride in the contribution that it has made to this process through its Environmental Law programme in over seventy countries across the continental frontiers of Asia and the Pacific, Africa and Latin America, and more recently in several countries with economies in transition. Yet, enforcement of existing laws and regulations remains a major challenge. To address this issue UNEP took yet another ground-breaking step when in collaboration with the South Asia Cooperative Environment Programme (SACEP) and with financial support of the Government of Norway, a Symposium was organized on the Role of the Judiciary in promoting Sustainable Development. It attracted the participation of Judges from the region at the highest level, including the Chief Justices and other supreme Court Justices as well as the Vice President of the International Court of Justice. The symposium was hailed by the Judges as a very important initiative to enhance the involvement of the judiciaries at all levels in the implementation of

environmental law at international and national levels and thereby accelerate progress towards the realization of the goals of sustainable development.

Education, as we are all aware, plays a pivotal role. It helps set the parameters of future action to help restore our planet and prevent further ecological deterioration. Education offers our best bet for the future, because education shapes the future. It nurtures the minds of young and old alike, broadening our understanding of the linkages that determine our global environment.

Education is not, however, confined to class-rooms. Environmental education touches everyone, from primary school to university students, to adult education, the education of policy-makers, industrialists, financiers, lawyers -- in fact all segments of society. In short, education helps orchestrate environmental action from grassroots activities to the highest levels of national and international policy. Experience shows that by engaging the people, by helping them to make informed choices, durable foundations are laid for future generations.

The Network on Environmental Training at the Tertiary Level in Asia-Pacific, or NETTLAP as it is commonly called, is a UNEP ROAP initiative designed to enhance the capacity of tertiary institutions in the Asia Pacific region to meet the education and training demands associated with efforts to achieve sustainable development in the region. Tertiary institutions are key players in ensuring that decision makers and others in the public and private sectors will be better equipped to make optimal policy and management judgments regarding natural resources, people and the environment.

By "training the trainers" of both the current and future environmental managers, NETTLAP capitalises on an opportunity with a large cost-benefit ratio.

UNEP has a strategic role in environmental training and education. UNEP's support for environmental capacity building, including human resources development, is achieved, in part, through partnerships. These include those we have with UNESCO at the international level and those with many key players at the regional and national levels.

We believe that training and other professional development programmes should be implemented within the framework of sustainable development, thereby allowing attention to also be paid to economic and social issues as well as environmental concerns. This will help capture the balanced and integrated approach that is so fundamentally important.

Several other creative and innovative measures taken in recent times by UNEP include the Green Hotels Programme, the Youth Environmental Ambassadors programme and a

programme directed at galvanizing women's groups in the Asia Pacific region to address major environmental problems that they face in their urban or rural settings.

UNEP's restructured programme, adopted at the 18th Session of its Governing Council held two months ago, is designed to respond to the needs of governments in the region. Partnership, coordination and regional delivery are the principal strategic elements of the new integrated programme, which is needs-driven and emphasizes results, rather than accomplishment of tasks. The programme as a whole aims, on this basis, to respond to four principal environmental challenges, namely, sustainable management and use of natural resources, sustainable production and consumption, a better environment for human health and well being and globalization trends and the environment. Capacity building is an integral part of each of these four responses and also constitutes the major thrust of the activities of the fifth cluster relating to global and regional servicing and support.

UNEP's Regional Office for Asia and the Pacific aims at underlining the catalytic and coordinating role of UNEP and its Governing Council's responsibilities for promoting international cooperation in the field of environment. It also provides policy guidance for environmental programmes within the United Nations system. The Regional Office gives technical advice and assistance, and fellowship awards; promotes environmental awareness; implements technical cooperation projects under trust funds; supports UNEP-implemented or UNEP-coordinated projects and provides inputs and support for activities of other UN agencies, international organisations and regional and national bodies.

Conclusion

The challenges facing us in the next millennium are not distant problems. They are not problems for governments or international agencies alone. They are human issues. We cannot forget that -- the human dimension -- when talking about "Health, Environment and Education". The challenges we face have been caused by human action -- by short-sighted, greedy and misguided action. They will be solved by humans -- by individuals, families, communities, as well as by governments. You, among countless others, have a responsibility to use your intellect to help save our world.

I am hopeful that my presentation today has done more than simply raised your awareness regarding environmental issues and the responses of the UN system to the many challenges we face. My intention was also to suggest the pathways we must take in order to reach the necessary, but elusive, goal of sustainable development.

Thank you.

CHAPTER FOUR

THEMATIC CASE STUDIES IN ACTION

Rung Kaewdang, Office of the National Education Commission

Anne Meade, N.Z., Centre for Educational Research

Jorge Sequeira, Planning, UNESCO

Charles Hopkins, Info Green

Moon Yong-Lin, Presidential Commission on Education Reform

RE-ENGINEERING EDUCATION FOR SUSTAINABLE DEVELOPMENT: INNOVATIONS IN EDUCATIONAL REFORM IN THAILAND

Rung Kaewdang

• Introduction

In Confucianism there is a saying, "For the nation's one-year plan, grow plants; for the ten-year plan, grow trees; but for the one hundred-year plan, educate people." No one can deny that education has been, and will be, the most important mechanism for sustainable development.

Thailand has long perceived education as a driving force for the economic and social development of the nation. Since the greatest education reform in the reign of King Chulalongkorn over one hundred years ago, the school has become the sole institute monopolizing the education operation of the whole country. However, along with the changing times, school education has brought about the phenomena of "desolation" in education. With much value placed on memorizing rather than creativity and expression, school education is seen as a main cause for students' distress in learning, which leads to a variety of ill effects such as drugs, suicide, school drop-out. For most students, homework, reading, exams are all troublesome burdens.

School has become an antagonist in views of various educators. In "The World Crisis in Education" Philip Coombs mentioned school's limitation and its responsibility for political and socio-economic problems. He also predicted that in the future society there will be a strong demand for lifelong education with non-formal education and informal education playing more important roles than school education. Peter Drucker also pointed out that, in the future, technology will radically change the role of school. According to Bill Gates, the potentiality of technology will allow people more access to education and enable tailor-made or self-directed learning.

In order to cope with the dramatic change, many countries launched education reform to gear the education system toward the 21st century. Thailand's education is no exception. The Office of the National Education Commission (ONEC), as Thailand's central agency for educational planning and policy development, has conducted research to initiate possible education reform.

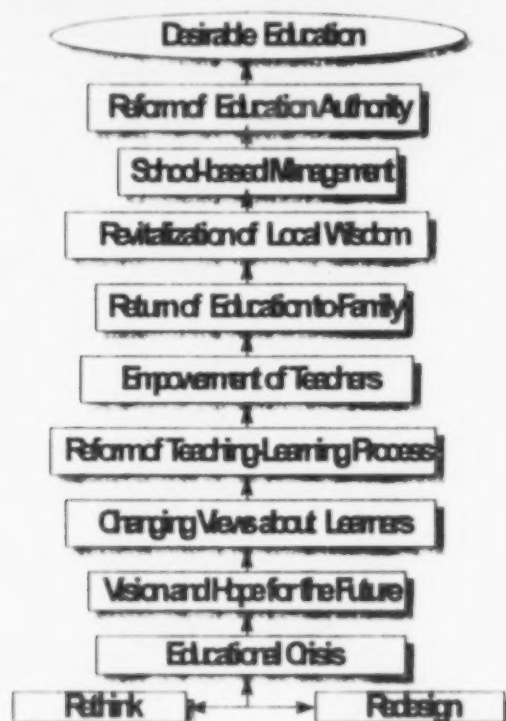
• Reengineering Education as Educational Innovation

While **Education Innovation** contains the key words such as introducing **new** things and making changes for **improving** the **efficiency** of education, **Reengineering Education** means "Rethinking the fundamentals of education and redesign **new** learning

process which will bring **great change** and yield **dramatic results** in education with measurable indicators in terms of learners's achievement or quality, **efficiency** of teaching staff and education administration".

- **Innovations in Education Reform of Thailand**

On behalf of the ONEC researchers, I would like to present some innovations stemming from the proposal for education reform of Thailand in two categories: **reengineering education and reengineering bureaucracy**. Both initiatives are based on "rethink" and "redesign". Firstly, the concept of reengineering education is illustrated as follows:



In reengineering education for sustainable development the first thing to think of is vision and hope for education in the future. To begin with, let's look ahead for a challenging and mission-driven **Vision of Education**. In ten years from now, with our every possible effort, education for Thailand is envisioned to be world-class in terms of both quantity and quality. As a learning society, education will be provided not only in school, but available everywhere: in families, historical sites, museums, communities, working places, public libraries, learning centers, technology etc. Thai people will have more access to diverse educational services responsive to their needs. Every individual has the right to quality education (Education for All) and all stakeholders will unite

together in functioning as educational agents providing education (All for Education). The ultimate goals of education reform are to bring about a happy life, a warm family, and a strong and healthy community. All of these hopes are contained in our 8th National Education Development Plan (1997-2001).

- **The Revolutionary View of Learners**

Until now, learners have received least recognition from the system. They are perceived as just receivers of education. Teaching and learning activities are designed by teachers according to what they deem appropriate. From the teachers' view, students have to attend classes for they cannot learn by themselves without the instruction from teachers.

In a new paradigm, however, learners are the supreme clients of an educational system, who can expect excellent educational services from us. Most of all, they have their right to quality education as provided by law. With one hundred billion cerebral (10^{11}) cells, and with the help of technology they possess high potential to learn by themselves. We should, therefore, change our view of learners from X theory to Y theory. The real reorientation of education is the recognition of the learners as active agents in the learning process. Thus, revolutionizing teachers' views towards learners is a necessary prerequisite for the child-centered learning process.

- **The Revolutionary View of the Teaching-Learning Process**

In most classrooms, there are more teaching than learning activities. As mentioned, memory-oriented learning not only hinders critical thinking development but also causes distress among learners. **How can we transform stressful education into happy learning?**

ONEC has developed theories of Happy Learning, Participatory Learning, Thinking Process Development, Aesthetic Value Development, and Character and Morality Development. Our researchers have redesigned and experimented learning activities in accordance to the above theories and transmitted them to teachers from concerned educational network. The full implementation of these innovations is expected by this coming academic year.

- **The Changing Roles of Teachers**

From time immemorial, Thai teachers had been highly worshipped and referred to as "god-like sophists". Experts of any knowledge and skill could be recognized as teachers, who received no salary but high respect. With the birth of teacher training colleges, there were still outstanding and talented teachers recruited into the teaching profession. However, because of the oversupply of teachers in the past decades and low payment, the teaching profession gained less recognition and popularity.

While struggling for their status, amid the rapid change in technology, teachers found their instructional roles challenged. In the information age, teachers are no longer the sole source of knowledge, the center of the classroom, or the ones who deliver knowledge to students. New developments in information technology such as computer-aided learning, interactive video, and internet provide more variety of learning opportunity for students. Accordingly, tomorrows' teachers are expected to tremendously change their roles from ordinary tellers to planners, facilitators, and advisors.

To enhance teachers' potentiality and to revitalize their role and dignity, ONEC initiated the "National Teacher Award Project", which will select excellent teachers to be models for the teacher reform network. The "National Teacher Award" winners will be additionally paid per month, reassigned with educational research work, and supervise and train others in the teacher reform network. Hopefully, this project will restore the popularity of the teaching profession and maintain outstanding and talented teachers in their teaching career.

• **Returning Education to Family**

In former times, the family played an important role in education ranging from language, literature, morality, agriculture, to domestic manufacture, but such functions were later dominated by schools after the adoption of the modern educational system.

One of the proposals for reengineering education is to revolutionize the role of the family in education with the belief that parents are the best teachers whose love and concern for their children are far greater than any teachers in the world. According to medical findings, the first three years of childhood are the most influential period for personality development. Thus, appropriate rearing by parents is necessary in order to cultivate desirable fundamentals for the rest of the child's life.

Realizing the significance of parents' role in education, ONEC is co-operating with related agencies in planning to launch the "Parents as First Teachers" project for parents of 0-3 year old children. Furthermore, for school age children, three models of family-school partnership are suggested.

Model I Families organize education themselves. In the case where the family socio-economic status allows, total responsibility for providing education to the child can be born by the family. Utilization of Competency-based Examinations and other standardized tests will help ensure the quality of education given by family.

Model II The family and the school share the teaching responsibility. By registering at school, certain subjects can be taught in the family such as home economics, plantation, traditional arts and handicrafts etc. In this case, the system of

transferring learning experiences in family is required so that it can be recognized as equivalent to credits in school.

Model III Partial involvement of the family is another alternative. Parents can participate in school activities, give comments and necessary suggestions concerning their child's education through meetings, school visits, and so on.

In all cases, nevertheless, parental education and training is necessary so that the proposed project and models can be accurately materialized.

- **Return of Local Wisdom to Education**

Local wisdom, the technique or knowledge developed accumulated for years by Thai original thinking, enabling people to live happily in accordance with the changing environment, is the most valuable national treasure. After the modernization of education over one hundred years ago, Thai education has adopted western knowledge, omitting traditional education especially local wisdom such as herb-based traditional medical treatment, multi-dimensional agriculture, traditional arts and literature, environmental protection and management. Since then, the relationship between school and community has gradually been torn apart. School education is blamed for not responding to learners' way of life and society.

In reengineering education, we need to restore long-time forgotten local wisdom and bring it back to education in all forms - formal, nonformal, informal. In my opinion, as the sole organizer of education, school always demands more personnel and budget. In spite of this, school education is not responsive to learners' ways of life, social and economic conditions, and the needs of community. Local wisdom exists in any community. Revitalization of local wisdom in education will help solve problems of shortage of teachers and budget. Most of all, students will be able to learn from real experts, real situations, and the natural environment.

To materialize this idea, ONEC has proposed the policy of adding local wisdom in all its forms at all levels of education. Moreover, it is necessary to respect and place high value on local wisdom experts, provide them with equivalence to certificated teachers in terms of the career ladder, privileges, payment, and fringe benefits.

- **Decentralization in Education Administration**

The school is the most important institute in the educational system because it is in school that teaching-learning activities occur. At present, it is generally admitted that centralization prevents schools from exercising decision-making power in both instruction and administration.

Several research findings have suggested that decision-making power concerning instruction and administration should be properly delegated to schools, but the suggestions have never been adequately responded.

Reengineering education aims to suggest that **School-based Management**, the administrative innovations adopted in many countries has a possibility for implementation in Thai schools. School-based management involves the participation of concerned stakeholders in the form of a Board of Trustees, including teachers, parents, principals, local authorities, and other community representatives. In addition, networking cooperation among schools, religious institutes, the community, families, the working place, public and private agencies is required to strengthen the local autonomy of school administration.

- **Reorganizing the Ministry of Education and Departments**

With the centralization of educational administration, the hierarchy and time-consuming procedures, education encounters the problems of red tape, weakened local education authorities, and even political threat from top of the system.

ONEC, therefore, suggests that by minimizing the Ministry of Education, by entrusting it with only the functions of policy and planning, setting national educational goals, standards, and evaluation, and delegating the practical details to local education authority and schools, it would reduce unnecessary procedures and make the Ministry more efficient.

- **Process of Reengineering Education for Sustainable Development**

The experience of success in education reform in various countries reflects the findings that, to retain the sustainability of the education reform, the promulgation of laws is required. ONEC is thus planning a strategy to secure the possible implementation of education reform in Thailand which includes the appointment of the Education Reform Committee, research study on related matters for education reform, the enactment of an Education Reform Act, and public hearings and the participation of concerned stakeholders.

- **Reengineering Corporation**

Compared with private sectors in business and industry, education lags behind in terms of **efficiency** both in content and the management process, especially bureaucracy, with a **centralization** and **hierarchy** which do not cope with the changing world. In my opinion, reengineering education will bring about quality education and reengineering corporations will facilitate the efficiency of the administration of any educational agencies.

Not only the Ministry of Education but also local education authorities and schools need to be reengineered for the efficiency of their educational services. Again rethinking and redesign are the most significant elements for the reengineering process. They should start with a powerful and challenging vision for great change for the future. Clarifying the main tasks and introducing privatization if necessary, redesigning a one-stop service for the work process, retooling by utilization of technology, establishing performance indicators, reorganization by downsizing, and retraining of personnel will eventually produce change and efficiency in dramatic terms.

- **Reengineering Education for Sustainable Development**

How can reengineering education lead to Sustainable Development? Firstly, reengineering education will undoubtedly enable "The development responsive to the needs of people without destroying the future developmental potentiality". (UNESCO). Secondly, it will enable "The process to achieve objectives in economic, social, and environmental terms" (Sustainable Development Research Institute).

Furthermore, in reengineering education, learners will be more self-contained and assisted in self-directed learning. Reengineering education will revolutionize educational views and concepts, especially the change of significance: from education to learning, from suppliers to demanders, from administrators to learners, etc. More participation from the family in education, balancing modern education and local wisdom, empowering teachers, school autonomy, downsizing the Ministry and reengineering concerned corporation for efficiency in educational services will lead to our desired education - quality education which is responsive to the needs of learners, communities and the nation.

We ONEC researchers and network members, are proud of our innovations in the reengineering of education in Thailand and would like to share our opinions with everyone so that the 21st century will witness not only world competition but also friendly co-operation for peace and prosperity in the region. Thus, "in education reform we trust".

INNOVATION IN EDUCATIONAL DECENTRALISATION A New Zealand Case Study

Anne Meade

Introduction

Some say it all started with the state sector reforms of the 1980s. Some say it came from Treasury's brief to the incoming Government in 1987. Some say it all started with the setting up of a taskforce to review education administration in mid-1987. All have some truth. Whichever, ... the actual education reforms began when the New Zealand Government agreed on a set of policies which were published in a booklet called Tomorrow's Schools in mid-1988. Although that booklet focused primarily on schools, the policy changes relating to structures, roles and powers of most institutions in the education system were so radical that the Tomorrow's Schools reforms affected everything. The Tomorrow's Schools reforms were more comprehensive than the other two reform documents: Before Five, and Learning for Life. They made self-management in all educational institutions an inevitability.

Policy development and passage

The path followed for the formulation of the reform policies was similar to that followed in many Western countries. A green paper was prepared, put out for discussion for a period of time, then the Government formulated its final policy and promulgated it in a white paper, from which legislation was drafted, debated, and passed.

However, there were departures from tradition. Some of these included the appointments of non Government chairmen for the Taskforce, and for the Working Party on Post-Compulsory Education and Training. The one for early childhood care and education was headed by an official - me. Another departure was that there were a number of community representatives on them.

A list of the green papers and white papers is provided below, with the dates of their release.

Green paper	White paper
Administering for Excellence (May 1988)	Tomorrow's Schools (August 1988)
Report on Post Compulsory Education & Training Life, One & Two (July 1988)	Learning for (February & August 1989)
Education to Be More (August 1988)	Before Five

(February 1989)

It can be seen that a very condensed time-frame was followed. The average time between releasing a green paper for consultation and making hugely significant decisions was five months. The whole set of decisions to transform the system was finalised in a year.

Then the detailed work was done by many different working groups. Final policies were approved by Cabinet, drafted as legislation and passed by Parliament. Not all policies in the white papers survived these processes initially, although some have been implemented subsequently. Reform legislation was passed in 1989, 1990 and 1991.

The Tomorrow's Schools policies. The terms of reference of the schools Taskforce included the concepts of the Department of Education delegating many responsibilities and of governing bodies of educational institutions having increased powers and responsibilities.

The Taskforce identified several weaknesses in the system at that time:

1. Overcentralisation of decision making;
2. Complexity;
3. Lack of information and choice;
4. Lack of effective management practices;
5. Feelings of powerlessness.

They reached the conclusion that radical change was required. They recommended a delegation of responsibilities in excess of all expectations. Key recommendations in the green paper were,

"The basic unit of our proposed administrative structure is the individual learning institution. Each institution will be under the overall policy control of a board of trustees - while the day-to-day control of the institution and the implementation of the policy will be the responsibility of the principal. The principal will be the professional leader of the institution and will be responsible to the board."

"Each institution will have a board of trustees responsible for the broad policy objectives and the efficient and effective running of the school. The board will be responsive to community educational needs and to set programmes and courses to meet them, within national objectives. ... Their broad responsibilities are ... for the institution's charter, for staffing, for allocation of funds, and for building maintenance."

(Department of Education, 1988a, p.45).

The green paper recommended an administrative structure at the centre

"for determining overall policy, for allocating bulk grants to those institutions, and for monitoring the system as a whole. Broadly speaking, the administrative system at the centre will be required to provide sound policy advice to the Government, to be capable of efficiency and effectively implementing those policies, and to provide accurate information about the outcomes of the policies," (Ibid., p.57).

It said that at the centre there should be:

- * an Education Policy Council (never established),
- * a Ministry of Education,
- * a Review and Audit Agency (now called the Education Review Office), and
- * a Parent Advocacy Agency (disestablished in 1991).

Other functions and services provided by the old Department of Education and regional Education Boards were to be provided either by new agencies being established, or by fully or semi-privatised companies, with most funds being transferred to the learning institutions to purchase the services.

The Tomorrow's Schools (1988) policies adopted most of these recommendations, although there was less privatisation than the green paper promoted. Instead, a range of agencies (Crown-owned entities) were established, for example, to provide special education services.

The Before Five policies

Early childhood care and education (ECE), complementary to the home, has been supported by the State for over 80 years in New Zealand. By 1988, ECE was provided by around 20 types of organisation, using 26 different funding formulae, with grants from a range of government departments. However, availability, accessibility and affordability of ECE varied from community to community, and from service to service. The State was seldom the direct provider; and has progressively withdrawn further in recent years. Most services are provided by community groups or private enterprise. These community groups have provided important training for parents' subsequent involvement in schools.

There has been strong support for ECE for decades in New Zealand from the community as well as Governments. Support has been strengthened following research findings which show that the community as a whole benefits when children begin school feeling good about themselves, and with a sound foundation in literacy, numeracy, language, social and physical skills. The community as a whole also benefits when parents can gain confidence in their parenting skills through ECE.

The Before Five policies placed considerable emphasis on the concept of equity. The policies aimed to improve access for families who were missing out by increasing the number of services, and improving quality, at affordable prices.

The policies, not unexpectedly, endorsed the new education structures and other policies in Tomorrow's Schools. Some variations were necessary because early childhood services are mostly NGOs, the units are small with fairly rapid turnover of families and workers, and the children are at a particularly vulnerable stage. Another agency was added to the education system: the Early Childhood Development Unit. Funding is via grants-in-aid to services in the form of bulk funds (on same per child, per hour basis for chartered services), discretionary grants to assist not-for-profit groups get established, and a fees subsidies for low-income families.

The policies did not require chartered services to provide parent education, which was one of the recommendations of the working party.

As most early childhood services were already self-managing, there were not many changes to services as a consequence of the Before Five policies. However, there were many changes for them - in terms of relationships with Government, bureaucratic activity, and increased funding.

The Learning for Life policies

Post compulsory education and training (PCET) in New Zealand means education and training beyond the age of 15 (from 1998, beyond the age of 16). The main difficulties of the old structures were said to be: lack of equity amongst institutions, uncoordinated policy advice, and failure to attract a wide range of students.

The principal features of reform policies decided by the Government were:

- * more decentralised decision-making, particularly for polytechnics and colleges of education, to make them more like universities,
- * the Ministry of Education's policy function would be more comprehensive and cover education and training,
- * a new mechanism of funding, based on an Equivalent Full-time Student (EFTS) formulae, and an expansion to include State funding to private providers,
- * changes to funding the research and scholarship functions of tertiary education institutions,

- * the establishment of a New Zealand Qualifications Authority to provide an across-the-board approach to validating national qualifications in schools, PCET institutions and industry,
- * the establishment of an Education and Training Support Agency, and a Careers agency,
- * the abolition of other bodies replaced by the three new agencies, and
- * mechanisms intended to minimise barriers to access for under-represented groups (such as student loans).

More places, greater accountability, a rationalisation of courses and resource allocation, maximising the potential of members of society, responsiveness to industry and the wider community, and vocational up-skilling were included in the aims of these reforms.

The changes to the central structures in themselves amounted to huge system change. The policies opened doors for private providers of PCET to be officially recognised and receive Government subsidies. As well, the internal changes required within state educational institutions were huge. A number of accountability mechanisms were included in the subsequent education legislation, including charters which require institutions to honour the Treaty giving Maori special rights, Government appointments to governing bodies, and legislative prescriptions about management (e.g., in the State Sector Act, 1988; the Public Finance Act, 1989; the Employment Contracts Act, 1991). The Government continues to make decisions annually about how many EFTS it will fund per tertiary institution, and what proportion of the cost per student it will subsidise (sinking over recent years to approximately 75 per cent).

Commentary

The initial reforms described above were mostly focused on administrative and resourcing changes. A key concept has been "choice". Commentators have made the point that choice for some can be at the expense of others. The combination of a fragmented system, choice, and self-management of institutions means education has taken on the characteristics of a commodity in the market place. Competition is seen by the critics to have shifted the emphasis away from "voice" options - students and families (and employers) now influence institutions by enrolling, leaving (or employing graduates), and less often by working within them and using democratic means to effect change. In my view, that criticism has more validity in the PCET and secondary schools sector. The schools sector, on the other hand, has had an increase in democratic participation through the Boards of Trustees having considerably more decision-making powers. Parents now have ready access to the main decision-makers: Trustees. Maori parents have successfully pressed for changes to set up bi-lingual units in schools, or to establish Maori immersion schools.

Growth in places has been another feature of the 1990s. In the early childhood sector, much of the growth can be attributed to the reforms. There was an increase in places of 95 per cent in 10 years from 1986 to 1996. The biggest increases have been in nga kohanga reo (Maori language nests), Pacific Island early childhood centres, playgroups and childcare centres. The former two indicate greater equity for ethnic minority groups, while the last reflects changes to the role of women in New Zealand. In the schools sector, demographic change (increases in birth rates in the late 1980s, and immigration in the 1990s), has resulted in sizeable roll increases. In the PCET sector, growth in state tertiary institutions can only occur when Government permits. There has been a steady increase in EFTS in the last decade. As well, there are now over 800 private training establishments of varying sizes offering PCET courses. Both types of institutions are enrolling more Maori and other ethnic minorities than in past decades. More equitable access is occurring.

Subsequent policy changes

Subsequent policy changes during this decade have been mainly focused on curriculum and qualifications. A new New Zealand Curriculum Framework for schools was promulgated in 1993, the same year that draft early childhood curriculum guidelines were released. Since then, several curriculum statements for specific learning areas have been promulgated (mathematics, science and English are official, and technology and the social sciences are a draft). The official early childhood curriculum was finalised in 1996. A large-scale programme of in-service training for teachers on these curricula in both sectors is under way. Each curriculum area is being developed and published in English and Maori, reflecting the bi-cultural nature of New Zealand.

A New Zealand Qualifications Framework is also being introduced. Put simply, this Framework is to place all national qualifications (including school educational qualifications) onto one linked framework. Schools can offer vocational qualifications courses, and PCET institutions may now offer national school-level Certificates. The component parts of all qualifications are units expressed in terms of the competencies a "graduate" should demonstrate. There is no direct association between the unit standards and curricula for qualifications. Therefore, all training providers (on-job, or in schools and PCET institutions) have had to re-design their curriculum and courses, especially the assessment processes and criteria, to demonstrate a match between competencies, units and qualifications.

Industries and key stakeholders contribute to the design of units of greatest interest to them. Industries and the New Zealand Qualifications Authority decide how many units at what level will constitute a particular qualification. In addition, whole qualifications are placed on levels within the National Qualifications Framework. The universities, with no directive to the contrary by Government, have thus far resisted transforming degrees into the format described above. Some polytechnics and colleges of

education, however, have recently had their degrees recognised and placed on the Qualifications Framework.

The net effect is that all those interested in education and training have been drawn into reviewing course curriculum, units, assessment approaches and processes, and qualifications levels. It has been a huge endeavour adding to the work-loads of teachers and managers of educational institutions in the midst of the structural changes described earlier. The group which has been most affected by the introduction of both the New Zealand Curriculum and the National Qualifications Framework is secondary schools, especially at the senior secondary level. Compulsory secondary education is also being extended a year from 1998.

Settlement?

The levels of acceptance of these policy changes vary by sector, and across time. There are few people who would want to go back to the pre-1989 systems. Yet, few are very satisfied with the current arrangements, even though there is mostly a high level of satisfaction with specific education institutions. Eighty-two percent of parents surveyed by Wylie (1997) were generally happy with the quality of their child's school. In the early childhood sector, the most contentious area is staff qualifications. As well, the level of Government funding is of concern to practically all organisations. In the schools sector, NZCER surveys (eg, Wylie, 1997), indicate good support for the curriculum reforms providing they are paced with due acknowledgement of high work-loads. Workloads and the adequacy of levels of funding are reported as major concerns. These appear to contribute to staffing shortages for classroom teachers and principals. That author concludes that,

"School self management did bring new energy and focus into primary schools, ... [and] teachers and principals have paid more attention to what they do, and why. Many principals and teachers do see positive gains for children." (Ibid., p.ix)

In the tertiary sector, competition between educational institutions is intensifying and financial viability is worrying some. There are various aspects of the qualifications policies which have been the subject of much criticism over recent years. Some are seen as policy design issues, some as policy implementation issues. There is scepticism about whether one intended outcome of the PCET reform - increased levels of skill in our workforce - is being achieved.

The number of issues and level of concerns have been sufficiently great in the PCET sector for the Government to review the PCET policies again. The 1990 reforms appear not to be sustainable, and yet the thrust of very recent proposals do little to allay the disquiet about equity issues and the tiers of quality which have emerged in recent years. Three new green papers have been released in recent months on: tertiary education, teacher education, and the National Qualifications Framework. Discussion is

intense, and submissions are being prepared as I write this paper. By next year, there could be further reforms in the PCET sector.

Sustainable development

The reforms in education in New Zealand have been radical. They happened within the context of related reforms in the State sector, and a wider movement of neo-liberal restructuring adopted in most OECD countries. Commentators say that these changes have produced winners, but also losers. For example, indications of poverty have increased in the last decade. At the same time, policies and legislation were introduced which focused on cultural maintenance and protection, and justice and equity. On the surface, there appears to be more equitable allocation of resources, and more culturally appropriate curricula, but there is no research evidence to substantiate this.

The concept of sustainable development has not been part of the discourse around the New Zealand education reforms. It could be argued that this is because the reforms have been pushing educational institutions toward private enterprise models of management within the capitalist traditions which are not renowned for being concerned with sustainability. Given the increasing emphasis being placed on sustainability in international forums like this, the New Zealand education reforms could be said to be at odds with some of the values being espoused in educational programmes.

References

Department of Education (1988a) *Administering for Excellence: Effective administration in education: Report of the Taskforce to Review Education Administration*. [Picot Report] Wellington: Department of Education.

Department of Education (1988b) *Report of the Working Group on Post Compulsory Education and Training*. [Hawke Report] Wellington: Department of Education.

Department of Education (1988c) *Education to Be More: Report of the Early Childhood Care and Education Working Group*. [Meade Report] Wellington: Department of Education.

Minister of Education (1988) *Tomorrow's Schools: The Reform of Education Administration in New Zealand*. Wellington: Department of Education.

Minister of Education (1988) *Before Five: Early childhood care and education in New Zealand*. Wellington: Department of Education.

Minister of Education (1989) *Learning for Life: Education and training beyond the age of fifteen*. Wellington: Department of Education.

Wylie, C. (1997) *Self Managing Schools Seven Years On: What have we learnt?* Wellington: New Zealand Council for Educational Research.

INNOVATIONS IN EDUCATION MANAGEMENT IN SELECTED COUNTRIES EXPERIENCING RAPID TRANSITION TO MARKET ECONOMIES

J. Sequeira

Sustainable development: a definition

"sustainable development is development that responds to the current needs of today's citizens and of the society at large without compromising and hindering the resources required to fulfill the development of tomorrow's citizens"

Working context

From the above perspective, the main focus of this paper concerns the contribution of education management and human resource development (HRD) to reforming and transforming the education systems, and the impact of these reforms on development issues such as sustainable development, poverty reduction and equity. The approaches and experiences described herein are based on UNESCO interventions and projects in selected countries of the Asian region.

UNESCO activities in the field of education management and HRD (as most of the activities developed by the Organization in the social sector) are primarily set in the framework of the UN Agenda for Social Development (1994), a blueprint for a re-energized drive to improve the human condition.

This agenda argues that the efforts by UN agencies like UNESCO have resulted over the years in significant reductions of illiteracy, poverty and mortality rates; these were however achieved in more traditional developmental settings, mostly stemming from the time of the creation of the UN system at the end of the 2nd World War.

Nowadays, the challenges posed by the post-cold-war era with all the different imponderables that have surfaced and their impact on the progress of nations demand that UNESCO recast its role and presence in the international scene. Education management and HRD do not escape from this requirement. While universal notions like sustainable development remain prevalent the backdrop has considerably evolved in terms of the target groups and their expectations, education responsiveness and efficiency to labour markets, donor countries and institutions, and increased globalization of societies.

Five major inter linked dimensions of development are considered by the UN social agenda: peace, economic growth, environmental protection, social justice and democracy. These major areas are grouped under the banner of sustainable human development. Thus, our education management and sector analysis interventions are formulated and conducted in the light of their contribution to this major target.

•

The mandate

The mandate of UNESCO PROAP in the fields of education management and sector analysis recognizes that the rate of development taking place in each of the Asian countries varies significantly. Sub-regions like Central or SE Asia illustrate the case. In

the former, countries are undergoing a profound transition from a centralized to a market-driven economy. In the latter, countries have experienced until recently impressive rates of accelerated socio-economic growth.

In both cases, education management and sector analyses have underpinned the reform and adaptation of education systems, the formulation of policy guidance and recommendations and the articulation of education development with the requirements of the social sector

The findings and recommendations obtained through education sector analyses and HRD challenge the UNESCO Member States to set priorities and focus on concerns specific to their needs. The requirements include the provision of basic education for the underserved groups such as girls, minorities, refugees or the disadvantaged; enhancing community participation, ownership of schools and training institutions; schemes for poverty reduction; improving education quality and learning achievements; paying attention to the pivotal role of teachers in education progress; and expanding information technologies and access to the Internet.

In response to this call strong efforts have been made to reassess the role of UNESCO in education management, especially against a backdrop of severe financial constraints. Amongst other issues, it is therefore imperative that UNESCO and its Member States examine its current education management portfolio in view of both the traditional and emerging issues that countries are facing.

Regional Issues

In conducting the above mentioned review UNESCO has considered that the following objectives should be achieved:

- identification of new priorities and confirmation of the more "traditional priorities" to be tackled;
- review of the current management approaches in terms of their suitability in responding to the new priorities and concerns; and
- identification of appropriate solutions in addressing emerging areas.

To achieve these objectives, it was deemed appropriate to undertake:

- a needs assessment survey,
- setting of new priorities jointly with the countries, and
- identifying responsive approaches in education **management, policy and information** ensuring the ownership of the initiatives and the results

The needs assessment was carried out through a questionnaire sent to the Member countries. It was designed to elicit needs and priorities for pre-selected topics emerging at the national level, school and community level, and the intervention levels (region, province, district).

The responses to the questionnaire revealed the following priority topics:

- at the national level: education finance; EMIS development for monitoring access and equity, quality and relevance; strategic planning and macro planning in education;
- at the school and community level: staff development (training); stimulating community support and participation; developing school improvement programmes; school-based EMIS, student assessment;
- at the intervention level: EMIS development for monitoring access and equity; micro-planning; supporting community participation in schooling; assessing quality, access and equity; identifying and reaching the under-served groups.

Interventions

Subsequently, UNESCO addressed the 2nd part of the exercise namely:

- identifying a coherent set of regional priorities for intervention;
- identifying country specific priorities in education management;
- reviewing the current methodologies and techniques on how to develop new management and sector work approaches in the areas considered of priority;
- prioritizing the sub-sectors and delivery modalities (pre-school, primary, secondary, vocational and technical, higher, continuing and distance education) where the interventions should be focused; and
- re-defining our role for providing assistance in education management and sector analysis in the light of the socio-economic transformations affecting the countries.

Regional trends

Education and HRD sector analysis exercises continue to be of paramount importance to support educational development. Issues pertinent to this discipline concern a) the quality and usability of the findings and recommendations such as the political interference or commitment to policy reform; b) assessment of the existing short- and long-term strategic and scenario planning; c) participation and collaboration of the various sectors such as health or the private sector; d) assessment of the existing managerial capacities at the various levels of the systems notably mid- and low levels for effective decentralization; d) quality of available data and adequacy of resource allocation, and e) ownership of the recommendations through participatory approaches.

The quality and relevance of education with particular reference to the curriculum, needs of the economy, programme standards and student performance, quality of teaching and teacher training programmes appear as the basic instruments to achieve the desired results. Amongst the various issues coming to the surface, the provision of local support to school management is considered as a key factor for a successful education reform.

Similar topics of interest are the ownership - Who "owns" the school? Openness - How "open" should schools be to the gaze, support and intervention of the community? Transparency - Are schools transparent, welcoming places to parents and the community or do they disqualify community knowledge and experience? Accountability - To what extent should schools be held accountable by the community for the quality of education they provide? Autonomy - To what extent should individual schools (and school clusters), in partnership with the community, have the autonomy to plan and implement innovations and to make themselves better? Supervision - To what extent supervisors and inspectors working as evaluators of individual schools and teachers are enforcers of uniformity rather than supporters and facilitators? Collaboration - How can collaboration both between the school and its potential partners and across schools themselves be promoted in order to expand the range of experience and resources brought to reinforce the process of educational change and school improvement? Innovation - What units and levels of a given Ministry of Education are responsible for finding, nurturing and disseminating local innovations - rather than stifling them in the name of uniformity?

These questions also include the need for:

- effective information communication as a basis for strengthening decentralization or devolution;
- concern of parents and the community for the students to perform well in examinations or in performance evaluation;
- the proper use of new technology versus the conventional teaching-learning process;
- the international comparison of student performance in terms of global competition;
- political control for the devolution of power;
- long-term strategic processes to cope with school-based management;
- conflicting application of the national policies and laws vis-à-vis Ministry of Education directives for reform; and
- the thrust of equity versus decentralization.

Another issue relates to how the community, the government and other sectors participate in financing education. How should expenditures of education funds be properly monitored? What appropriate mechanisms should be adopted for a more rational allocation of resources? What role should the participating sectors play to ensure that funds are utilized to the maximum? and What incentives, guidance and controls does Government provide to promote community financing?

The risks which may arise are also potentially disadvantageous to the communities, namely: the political dimension and the distribution of authority, disparities and encouragement of less active groups, and the scale of the operation. It is also worth acknowledging the importance of effective monitoring and evaluation of all the activities related to decentralization.

At the macro level the need for auditing, re-structuring and revamping the national education institutions (such as MOE) remains a matter of concern (*a new mission, a new vision for the next century*).

In relation to education schemes to reduce poverty and community-based activities, national policies to consciously promote education for poverty reduction have to be devised. What type of support is provided to make education an effective tool for poverty reduction? What kind of community-based activities are appropriate to combat poverty? What role should the national government agencies, non-government organizations, the local government units, the community leaders and the people themselves play in order that the convergence of resources and interventions be maximized? When do we consider activities community-based; when they are community initiated? in the community setting? community implemented?

Different strategies and delivery mechanisms for public provision have also to be considered: delegation of authority for effective school-based management; provision of fund assistance to students and not to the school; response to demand instead of supply; importance of system outputs not inputs; sources of public funds and balance between public and private funding.

Institution management remains an important dimension of educational management. Several characteristics are identified: flexibility in terms of responsive and autonomous action planning; efficiency in terms of per student cost and drop-out rates, merging or clustering of schools; accountability in terms of appraisal of inputs and measure of outputs or level of achievement; and management information systems at both the beginning and the end of the process.

Management information systems (EMIS) remain a major area for improvement in both the formal and non-formal sectors. The inadequacy of reliable data and information is still apparent in many countries; in some cases no definite central or national body operates or is in charge of the EMIS; lack of government support to monitor education activities, lack of policy directions and common terms of reference in the form of indicators, poorly defined data needs and requirements are also of concern. Reliable and timely data on education to fulfil the needs of the growing number (e.g. provinces, districts, private sector) of users need to be addressed properly.

Recommendations have been drawn up with regard to UNESCO endeavour in education management in the years to come:

- UNESCO's interventions will necessarily differ by country because the needs are different
- UNESCO needs to strengthen capacity building in strategic and scenario planning, policy formulation, sector analysis and advocacy for successful models/reforms

- UNESCO should examine mechanisms for the self-financing and accreditation of education institutions
- UNESCO should help reach disabled groups; should provide more focus to science and culture; should encourage the Member States to contribute more on an equity basis so that the poor countries can be provided with more assistance
- UNESCO should continue to play a valuable role to facilitate further development in educational management and policy through the conduct of seminars on topics of interest. Senior educators but also ranking officials from other Ministries such as Finance, Labour and Employment, Economic Planning, Social Welfare and even the cabinet members should be invited since they are also important decision-makers in the education policy-setting process.

The following topics are considered of priority: Managing Education Reform; Teacher Training; Costs and Financing of Education; Curriculum Reform; Moving to Nine-year Compulsory Education; Student Performance Assessment; Impact of Training on Quality of Education; Monitoring and Accountability; Modern Textbooks and their Production; Development of Criteria for Standardizing Education.

Contribution to the transition period

The contribution of education management and sector work to sustainable development in the face of transition/crisis periods concerns the identification of areas for rapid intervention to reduce the adverse effects of economic downturn and retrenchment. The most important ones are described below:

The re-training of unskilled laid-off workers as a condition for structural reform. This also has clear links with the employment sub-sector and with the internal and external efficiency of the education system. Notably implicated are the secondary, vocational/technical and higher education levels.

A teacher-oriented approach having the teacher as an agent for change and catalyst at the school level but more importantly at the local level (village, community) in terms of his/her contribution to local socio-economic growth. That is to say that, while implementing a strategy to rationalize the teaching force, it should be borne in mind the need to build managerial capacity to:

- reinforce decentralisation practices;
- improve the allocation of resources and effective target-setting at the local levels;
- develop linkages between the communities and the local education system through the constitution of alliances and partnerships (PTAs, private efforts), and
- encourage the ownership of the results, the accountability and the locally based decision-making.

Thus, schemes to improve education quality will consider not only the "traditional" qualitative aspects (textbooks, in-service training and the like) but also the building of a solid layer of mid-level management. In other words, the combination of both conditions will result in a conducive instrument for reform in the long run and the establishment of a mechanism to ensure sustainable financial and management responsibility.

Moreover, this approach could certainly also be developed at the secondary and technical/vocational levels, considering the linkages with the private sector, job-oriented skills training and the relevance of the curriculum.

The participation of private sector needs to be tangible as to the scope and expectations. After all, the private sector cannot bear the brunt for the inadequacies of the public sector as it is also badly affected. Similarly, the expectations of the private sector may not be fulfilled, as the rates of return of the investment in training may not bear fruit in the short term.

It is therefore critical to introduce the concept of strategic alliances bringing together the recipients, the private sector and government institutions. If decentralisation is considered as being a backdrop to this strategy then better focused target groups (e.g. rural dwellers, urban poor) receiving quick-to-learn entrepreneurial and management skills training, coupled with basic technical/vocational/agricultural training may yield faster and better results in the short term.

Although it is not a condition per se, it is clear that the capacity and accountability of the training and Government institutions are also issues to be tackled. This entails the setting up of effective monitoring and evaluation mechanisms, management information systems, performance indicators and systematic reviews of the situation. This becomes all the more important since new actors -- such as the private sector and the communities -- are likely to enter the education arena from different angles and bringing with them different perspectives. It is therefore critical to consider institutional accountability, responsibility and monitoring throughout the transition process.

Phasing

Experience demonstrates that the implementation of such a strategy requires an approach by phases. Three stages are usually (but not always considered); these steps shall be accompanied by a series of education management and training schemes duly adapted and tailored to respond to the exceptional requirements of each phase situation. These steps should lead to structural reforms of the education sector and have to be envisaged bearing in mind a *new vision, a new mission*.

An approach by steps will also help to demarcate the real priorities in order to sustain the gains of the system and to reduce the crisis-provoked imbalances. At the same time, it will provide a good framework for monitoring and assessment of the progress of the other sub-sectors, thus enabling an integrated approach ("helicopter view") of the situation.

This becomes critical whenever, in the process of decentralisation, the levels of depth (village, district, provincial) are to be considered, since the countries have clearly uneven management and institutional capacities in the administrative structure.

A first stage of rescue/emergency interventions ("rehabilitation") aims primarily at sustaining the education gains and responding to the most pressing needs (e.g. reduction of dropouts, maintaining the current levels of equity, securing minimum learning achievements,...).

A second stage addresses mid-term issues and objectives to lay the ground for a solid foundation of human resource development and structural reforms, thus rendering the education system more flexible and responsive to a competitive labour market.

A third stage concerns a broad range of long-term issues typical of the transition periods such as governance, institutional support and improved labour, wages and social conditions ("safety net") for all sectors of the society.

Priority Interventions

A main objective is therefore the mitigation of the negative impact of the transition/crisis period. The interventions shall focus on a) the retraining and acquisition of basic life skills especially for the most vulnerable sectors (both rural and urban) and especially the laid-off workers; and b) support for skills' development programs emphasizing entrepreneurial skills, self-reliance, micro-planning and financial sustainability. These interventions address directly the retrenchment of the labour force, the impact of the transition/crisis on social welfare and the reduction in the demand for labour.

Structural reforms to enhance the participation and investment of the private sector in education are of key importance. These entail a) a thorough review of the monitoring and accountability practices of the education centres and their human resource capacity; b) an assessment of the linkages between the education and training contents and the requirements of the labour market; and c) the analysis of the internal and external efficiency -- including labour-related and performance indicators -- of the institutions, linkages between industry and training, and the relationship between labour demand.

A third level of priority may tackle the inadequacies of labour supply and demand, including the delivery of social services having as backdrop a) the severe budgetary constraints and imposed financial discipline; b) the downgrading of social programmes and services and c) the imponderables of government-driven rehabilitation strategies. Measures to respond to these issues concern analyses of the cost-effectiveness and relevance of labour- and social-related programmes such as poverty reduction, decentralization of budget and authority and optimization of the social budget.

On Decentralisation

Step-by-step decentralisation initially from the central authorities to a group of selected provinces and in a few selected districts as pilot project may be of help. Successful

modalities can be replicated in other provinces/regions at sub-district/township level and downwards.

At the provincial level education and training Committees may be set up to serve as focal points for decisions on budget, curriculum, facilities, training and retraining, PTAs guidelines and overall management responsibility. The Committee may comprise representatives of the cross section of the respective community, foster self-reliance and autonomy and encourage the participation of other sectors such as health and labour; other members could be provincial education officers, directors of schools, PTA representatives, MPs and private sector representatives.

Conclusions

UNESCO undertakings in education management, sector analysis and HRD shall evolve with the requirements of the countries. Over the years clear trends downwards in the education ladder (from the central level to provinces, to districts and communities) can be easily observed in the management practices.

As countries refer increasingly to village- district- and province-based development plans it becomes apparent that sectoral and HRD reviews are needed at those levels respectively emphasizing micro-planning, minimum managerial capacity and accountability, school- and community-based management information systems and overall empowerment -- delegation of budget and authority -- of the actors involved.

This by no means represents the abandon of the "traditional" -- and not yet fulfilled -- everlasting goals of literacy, access, equity and relevance, which are at the very basis of UNESCO *raison d'être*. Similarly, macro-planning, national resource allocation and the overall Governments' management and financial responsibility cannot be left aside. However, the trends described above demonstrate an increasingly important drive of the recipients, parents, NGOs and many other segments of the society to intervene directly and responsibly in their own human development.

Thus, in introducing above the main regional issues and experiences that UNESCO has witnessed in its projects and activities, it becomes apparent that the Asian countries face at the dawn of the 21st century a challenging task: how to elaborate effective education management and sector analysis strategies to develop a strong foundation of human capital for better sustainable development. This daunting journey has already commenced and UNESCO role is now geared consequently.

EDUCATIONAL INNOVATION FOR ENVIRONMENTALLY SUSTAINABLE DEVELOPMENT

Charles Hopkins

Chair, honoured guests, fellow speakers and fellow learners.

May I begin by saying how pleased I am to be invited to share with this conference, some of my thoughts and suggestions regarding educational innovation to support an environmentally sustainable future.

I specifically used the term "learners" in my opening greeting for I believe that we truly are learners when it comes to matters of sustainable development in general and especially education practices regarding this critical goal. I think that this emerging concept of environmentally sustainable development or ESD is further reinforced in the request from the conference planners to have each speaker create a setting or context for their remarks by indicating their particular definition and perspective of sustainable development. Let me then begin by trying to create my perspective and my rationale for having these views.

My definition of sustainable development is broad. I often reflect upon one of the key insights, 10 years ago, of the Bruntland Report to the UN.

Until recently, the planet was a large world in which human activities and their effects were neatly compartmentalized within nations....and within broad areas of separate concern (environmental, economic, social). These compartments have begun to dissolve. This applies in particular to the various global "crises" that have seized public concern. These are not separate crises: an environmental crisis, a development crisis, an energy crisis, an economic crisis. They are all one.

(World Commission on Environment and Development, 1987)

I take this insight seriously as it recaptures the essence of the documents that emerged twenty years ago at the birth of the International Environmental Education Programme at Tbilisi, USSR in 1977. These documents also called for the holistic balance of environment, social, and economic solutions to environmental threats to the planet. Today, years later, we still have problems seeing these isolated threats, as one.

How much of the economic struggles of Asia, or the political struggles of eastern Europe or the fishing crisis off my own Canadian coasts are seen as the combination of issues, environment, governance, social, and economic etc.? Certainly the attempts to solve these issues have been largely a series of unrelated singular initiatives.

It was in an attempt to cope with these threatening issues as larger holistic challenges, that the world's leaders at Rio de Janeiro in 1992 endorsed the concept of "Sustainable Development" and an accompanying action plan to begin to move toward a more sustainable future. This action plan called Agenda 21 identified approximately 40 major issues and made serious recommendations for concerted effort. My perspective of sustainable development includes as an initial base, these 40 critical issues and I will come back to them later when I outline the content of an innovative curriculum that begins to address education for a sustainable future.

The essence of the Rio/Brundtland definition is familiar to all here today:

Sustainability: the integration of environmental, economic and social consideration in development that optimizes human and natural welfare and integrity for present and future generations.

In the eyes of the critics, the term "sustainable development" is seen as both a political solution and as a confusing concept far too simplistic for meaningful use. I agree with these observations entirely. The use of the term "eco-efficiency" by industry as a synonym for sustainable development bothers me greatly. The use of the term "conservation" by others as another synonym also is equally myopic for my vision as it totally overlooks the political and human aspects of sustainable development. I personally think, however, that sustainable development is the best currently viable bridging concept for people of "good heart", trying to move in the right direction and needs all the support it can gather. It will be our striving to forward this concept that will help us evolve beyond it.

Sustainability, in its simplest definition, means not living beyond one's ecological means. I was once present in the far north of Canada when a conference presenter, who had gone on at length about the definition of sustainable development, asked an indigenous elder if he understood. Not taken aback by the rudeness of asking the elder in front of others if he understood, the elder quietly replied. "If you mean that if I live my life in this sustainable way, my forefathers will smile proudly down on me, and the children who are yet to come to mother earth will still want to born, then I think I not only understand, but I also agree".

If the concept of sustainability is essentially simple, in the sense of not using or consuming resources beyond their ability to be replaced or renewed, the definition and application of such a concept in the extraordinarily complex context of global development and commerce is not. Agreement on a single definition is elusive, and will no doubt entail an ongoing and lengthy debate. Given consensus in many quarters that the world is presently living beyond its ecological means, it cannot wait for agreement on a precise definition to engage in a serious examination of what sustainability means in practice. Regardless of a universally accepted definition, it has become apparent, that to ensure the well-being of future generations, indeed the very prospect of the continued capacity of the natural systems to support human life, it is necessary to address the issue

of reorienting our entire culture and world view to embrace the simplistic goal of a sustainable future.

One of the primary tools that enhances the achievement of this critical endeavor is education. Education in its broadest and most inclusive forms, embracing formal schooling, the non-formal knowledge of public institutions, NGOs, corporate training, and the multitude of informal opinion molders such as the mass media, needs to collectively develop widespread public understanding and critical analysis. This will hopefully become the fuel to sustain the democratic societal evolution towards sustainability.

The importance of public understanding through education, awareness, and training was recognized from the very beginning of the call for sustainability at Rio in 1992. Located both throughout every chapter of Agenda 21 and as a separate stand alone chapter: Chapter 36, Education, Awareness and Training, the critical importance of public understanding and knowledgeable support was seen as fundamental to any progress to be made. It is interesting to note that after the word government, the second most common word in this text of hundreds of pages is "education".

Again in 1996 at the UN Commission on Sustainable Development (CSD) meetings in New York, in recognition of the importance of public understanding, the CSD called for a special Work Programme on education, requested UNESCO to continue as Task Manager of Chapter 36 to facilitate the simultaneous development of this 12 part Programme. The importance of education was again underscored at the Special Session of the General Assembly (23-27 June 1997), convened to review the implementation of Agenda 21 and the progress since Rio. The resulting resolution adopted by the session, emphasized that "a fundamental prerequisite for sustainable development is an adequately financed and effective educational system at all levels, particularly at the primary and secondary levels, that is accessible to all and that augments both human capacity and well-being". "Even in countries with strong educational systems," the resolution continues, "there is a need to reorient education, awareness, and training to increase widespread public understanding, critical analysis, and support for sustainable development. Education for a sustainable future should engage a wide spectrum of institutions and sectors,.... and should include the preparation of sustainable development education plans and programmes.

There are many impediments to the evolution of a sustainable future, from the lack of vision that people truly believe will work successfully to the resources to implement the necessary changes without massive disruption and suffering. Even this singularly repeated request to reorient education is an enormous, overwhelming task.

Most education systems are inherently designed to prepare students to participate in the evolution of their societies and economies primarily through industrialization and commerce. It sets as priorities the learning of language, the social sciences, and the arts to cultivate the creative potential of well-rounded individuals able to contribute to building

cohesive societies and rich national cultures. It emphasizes the study of science, mathematics, technology, business and agriculture as a foundation for the creation of material prosperity. This basic premise is so ingrained in what is becoming the dominant world view, that we even use international examinations, laden with the current exponential development values, to compare our students and hence their school systems for their ability to compete on a global scale. Modern development has reached a crisis of sustainability, yet our education systems are moving ever more rapidly towards greater support for this threatening industrial development paradigm.

Yet there is hope. Today, some five years later, one can see a major reconciliation of the differences that were apparent in Rio. As a result of five major UNCED follow-on conferences in Barbados, Copenhagen, Cairo, Beijing, and Istanbul, the concept of sustainable development has expanded to include human development and well-being. The term "sustainability" is often used to express this new broader and more encompassing vision: The focus has broadened to include the three major concerns of environment, economy, *and* society

It is this new, broader definition that has a profound possibility of engaging a wider spectrum of people capable of this task of reorienting education. Two enhancing aspects are becoming evident.

The first aspect is that the scope of sustainability is so very broad that no one discipline can understand it all, or be responsible for owning or controlling the task. From an educational perspective, this also means that no one person should be expected to know or comprehend the many aspects of sustainability beyond its rudimentary principles. This is not an insurmountable weakness, however, as indigenous peoples world wide maintained viable civilizations for thousands of years guided only by the principle of inter-generational equity, and living within their ecological means. North American Indians had a principle of not doing anything to the land and their resources that could negatively affect the next seven generations. Guided by that broad principle, they lived within their means for thousands of years.

The second aspect is that, because of the tremendous scope, every individual *can* and *should* contribute something to the task. Everyone can almost intuitively be a part, even without extensive training.

To understand these two aspects more fully, one must understand the full scope of the various components of sustainability. The essence of education for a sustainable future is now seen as an understanding of the forty critical issues identified in Agenda 21, as well as the issues further identified in the action plans of the five UN follow-on conferences, the agreed Conventions such as the Conventions on Biological Diversity, Climate Change, Desertification and the Statement on Forests. In addition, there are critical emerging issues for which the Rio process could not attain international agreement on suitable action plans. Such issues as war and militarism, appropriate governance, discrimination and nationalism, multinationals, consumption, and selected

others have not been solved and also constitute a stumbling block to a sustainable future. The following groups of issues illustrate the broad scope of the content of education for sustainable development. I begin with the four sections or groupings of issues identified in Agenda 21.

AGENDA 21

SECTION 1; SOCIAL & ECONOMIC DIMENSION.

INTERNATIONAL COOPERATION, COMBATING POVERTY, CHANGING CONSUMPTION PATTERNS, POPULATION AND SUSTAINABILITY, PROTECTING AND PROMOTING HUMAN HEALTH, SUSTAINABLE HUMAN SETTLEMENTS, DECISION-MAKING FOR SUSTAINABLE DEVELOPMENT.

SECTION 2; CONSERVATION & MANAGEMENT OF RESOURCES.

PROTECTING THE ATMOSPHERE, MANAGING LAND SUSTAINABLY, COMBATING DEFORESTATION, DESERTIFICATION AND DROUGHT, SUSTAINABLE MOUNTAIN DEVELOPMENT, SUST. AGRICULTURE AND RURAL DEVELOPMENT, CONSERVATION OF BIOLOGICAL DIVERSITY, MANAGEMENT OF BIOTECHNOLOGY, PROTECTING AND MANAGING THE OCEANS, PROTECTING AND MANAGING FRESH WATER, SAFER USE OF TOXIC CHEMICALS, MANAGING HAZARDOUS WASTES, MANAGING SOLID WASTES AND SEWAGE, MANAGING RADIOACTIVE WASTES

SECTION 3; STRENGTHENING THE ROLE OF MAJOR GROUPS

WOMEN IN SUSTAINABLE DEVELOPMENT, CHILDREN AND YOUTH, INDIGENOUS PEOPLE, PARTNERSHIPS WITH NGOs, LOCAL AUTHORITIES, WORKERS AND TRADE UNIONS, BUSINESS AND INDUSTRY, SCIENTISTS AND TECHNOLOGISTS, STRENGTHENING THE ROLE OF FARMERS

SECTION 4; MEANS OF IMPLEMENTATION

FINANCING SUSTAINABLE DEVELOPMENT, TECHNOLOGY TRANSFER, SCIENCE FOR SUSTAINABLE DEVELOPMENT, EDUCATION, AWARENESS AND TRAINING, CREATING CAPACITY FOR SUSTAINABLE DEVELOPMENT, ORGANIZING FOR SUSTAINABLE DEVELOPMENT, INTERNATIONAL LAW, INFORMATION FOR DECISION MAKING.

In addition to the breadth of issues identified in Agenda 21, there are further related issues and more evolved refinement of thought in the following areas of Conventions.

Statements, the five major UN follow-on conferences and the constant pressure of the newly emerging issues. Each of these topics have a specific education and public awareness component. These are more specifically outlined as follows.

CONVENTIONS AND STATEMENT OF PRINCIPLES

- STATEMENT ON FORESTS
- CONVENTION ON CLIMATE CHANGE
- CONVENTION ON BIOLOGICAL DIVERSITY
- CONVENTION ON DESERTIFICATION

EMERGING ISSUES BEYOND AGENDA 21

WAR AND MILITARISM, GOVERNANCE, DISCRIMINATION AND NATIONALISM, RENEWABLE ENERGY SOURCES, MULTATIONALS, REFUGEES, NUCLEAR DISARMAMENT, HUMAN RIGHTS, MEDIA / WORLDVIEWS

It is this broad scope ranging from agriculture to governance, from biological diversity to health and well-being, that can be both seen as overwhelming for some or as inviting and engaging by others who feel they can make a difference in one way or another. At this point, sustainability becomes a societal issue. It becomes a matter of social will. With such a broad range to choose from, each of the world's 51,000,000 teachers has something that they can contribute to the effort. We can no longer look at reorienting education to address sustainability only as a "needs" model. Each teacher has an existing strength that they can bring. We all can find ourselves within the movement. Every individual, every discipline in a school, every department in government, every sector in the corporation, we must each do what we can within our area of expertise, contributing to a local effort as it in turn becomes part of a national effort and again becomes part of a global solution.

We must each continue to envision the preferred larger picture, removing the institutional blockages while continuing our small changes, initiating new methods, phasing out unsound practices and slowly evolving towards a more sustainable and just society. Much work remains in bringing these global concepts back to the local level, creating relevance for the students.

Let me now move on to share three innovative practices of which I have been a part and that I feel can be replicated in a locally modified state.

The first example is an attempt by a large school board to reorient its entire curriculum from Jr. Kindergarten (4 year olds) to Grade 9 (15 year olds). In 1993, I was the Superintendent - Curriculum for the Toronto Board of Education. We undertook to completely review the school curriculum and prepare a curriculum that was community-

based and valid for the 21st Century. I had just completed a one-year sabbatical during which time I was the chair of the World Congress for Education and Communication on Environment and Development, ECO-ED. (Toronto 1992). At this massive event, over 4000 individuals, stakeholders from many sectors including governments, commerce, NGOs, educators, etc., from 88 countries discussed the recommendations of Rio and the importance of education and public understanding. But what does reorienting education towards sustainability mean in practical terms. This is what educators immediately want to know. Does it mean adding courses? Will it require new teaching approaches and methods? New physical facilities, equipment and textbooks to be purchased from an already severely pinched budget? Is it something to be achieved in a month, a school year, or several years?

We began a massive community consultation that lasted several months. Over seven thousand parents, students, staff and members of the public contributed to full day community consultations aimed at exploring how education should respond to the demands of a changing world. These were not 5 minute deputations but rather small group discussion sessions where all suggestions were recorded and synthesized into overall recommendations. The focus of the inquiry was the question "What should students know, do and value by the time they graduate from school?". The question of "sustainability" was not imposed; but rather, it emerged as an essential requirement in the course of the consultation.

The education that parents and the community wanted for their children was hardly revolutionary or even surprising. The six graduation outcomes, the distillation of the thousands of recommendations were: literacy, aesthetic appreciation and creativity, communication and collaboration, information management, responsible citizenship and personal life skills, values and actions. These differ from most traditional curricular objectives in that they are broader and more closely related to the needs and organization of life than to the requirements and structures of schooling. These differences become more evident when one examines the manner in which these six objectives are developed and applied. The goal of "responsible citizenship", for example, is defined as follows: "Our students will value the diversity of the world's people, cultures and ecosystems. They will understand and actively promote equity, justice, peace, the democratic process and the protection of the environment in their own community, Canada and the world." Citizenship, it is noted, involves "cooperating with diverse members of one's community to formulate and achieve goals for the common good". The good citizen is also concerned "to protect, preserve, and enrich our world for our own well-being and for our children and future generations".

The essence of the Toronto reform is that the curriculum is focused largely but no longer exclusively on the traditional core subjects of language, mathematics, history, etc. Informed by the new vision of what the community felt tomorrow's students would need to know and be able to do, these disciplines underwent major revision. Each discipline was rewritten to show how they contributed to the six graduation outcomes.

As a result of the concept of sustainability being so embedded in the six graduation outcomes, when the teachers began addressing the graduation outcomes and producing the practical documents, they inherently wove the strands for ESD into the framework as well. Mathematics, for example, now includes the skill of comprehending extremely large and extremely small numbers - e.g., parts per million (ppm) and parts per billion (ppb). This comprehension is essential to being environmentally literate and capable of understanding relative risk factors both in personal life and at work. Health education now includes environmental issues including cancer, allergies, and food additives as well as "consumerism". Language arts now includes Media Literacy as another valid yet fresh approach to "consumerism". The list goes on. Social Studies, a combination of History and Geography, now uses themes such as "Change" and "Power" throughout the document and uses these central concepts to explain the notion of "power" all the way from the school yard (anti-bullying programmes) to the corporate world and the international stage. "Change" covers everything from their own bodies in the primary grades, through community development to factors affecting global change. Each theme or concept is adjusted for the appropriate age level and comprehension ability.

Much of the success of the Toronto reform is due to the fact that it was not - and was not seen to be - an effort to change education to meet goals set by an elite or unduly influenced by outside pressures. The impetus to change came from within. In addition, the new curriculum and the new report cards that reflect the change was developed by Toronto teachers in full cooperation with the teachers' federations. The curriculum that resulted had equal or greater academic rigor, but far greater relevance to life outside school walls. Parents told us in fact, to educate children in a manner that does not make them aware of the growing interdependence of life on earth - interdependence among peoples and among natural systems - would be to misinform and ill prepare them for the future.

This programme, based on accumulating the current best practices of existing programmes and unifying or focusing them towards achieving the six community developed graduation outcomes is but one example of a strength-based curriculum development project. Its importance lies in the recognition that the traditional needs based reform is too expensive, even for wealthy school systems. We began with a clear vision and then relied on the professionalism to begin to move forward.

I realize that Toronto had many things going for it. It has well-trained teachers, a decentralized curriculum and funding to both hold the months of consultations and funds to pay the teachers to rewrite the curriculum. The point transferable concept of this example, however, is to illustrate that when curriculum development is conducted, and this cyclical process is an ongoing process in every country of the world, the concepts of ESD can be infused into each and every corner of the revamped documents.

A second example of curriculum innovation involves the use of teachers and students carrying out energy conservation activities to both save money and to improve the curriculum. As the executive director of the John Dearness Environmental Society in

Toronto, I oversee an NGO that delivers an energy conservation curriculum called Destination Conservation (D.C.) to approximately 400 schools in our province. The schools pay a fee for this service. However, the resulting energy savings are usually 4 times the cost of the program. In their studies, the students monitor their energy, water, and waste practices and integrate the content of the D.C. materials into their ongoing curriculum. In many of the schools, a percentage of the savings are returned to the school to be used to retrofit the building or plant shade trees etc. so that even more savings can be incurred.

It is planned to expand the D.C. program to include other areas of student concern and to build a program that is still largely funded by the energy, water, and waste savings but addresses the entire spectrum of sustainability. It is no surprise that the name for this newly-evolving program is called "Destination Sustainability".

The last innovation that I wish to mention involves students monitoring environmental change in their community and inputting their data directly into government researchers computers at Environment Canada. The initial project involved secondary and elementary students initiating forest plots. The plots are official UNESCO MAB/Smithsonian Institute one hectare plots and the students survey and accurately plot the forest growth both on paper and enter the data on each tree into a computer software package developed by Environment Canada. The program has spread to over 100 sites across Canada and the concept has moved from trees to ponds, animals and invertebrates. Teachers have found that this careful monitoring is an excellent way of teaching the concepts behind Global Change. The newest component of this project, entitled Ecological Monitoring and Assessment Network (EMAN) is to develop a way for the schools in the Destination Conservation program to enter their energy savings, converted into CO2 equivalents into the EMAN computer. This would be a way for youth to measure their contribution to the global effort to reduce greenhouse gases. The mathematics and science to understand the conversion process, as well as the social skills to launch and maintain the DC program are again components of innovation in education for environmentally sustainable development.

In conclusion, I wish to point out that the very recognition of the central role of education is a major step forward, but the need to recognize and include educators in national and local sustainability programmes is also critical. Educators must be included in the planning process if they are to truly be a part of the solution. They will not, nor should not, be used for political movements but in a societal issue as deep as obtaining a sustainable future for their own children, educators are a vital stakeholder.

This paper has been about recognizing the need of public understanding in order to achieve a sustainable future. It is also about a few of many innovations that will assist in the quest of reorienting the formal and informal education systems. Let us use every possible means to cooperate and learn together to develop locally appropriate responses to assure an environmentally sustainable future for at least the next "seven generations".

**Educational Innovation for Sustainable Human Capacity Building :
A Case Study of The Republic of Korea**

Yong-Lin Moon

Korean situation : A Need for Restructuring Human Capacity Building for Sustainable Development

As the era of globalization and information draws near, the variety of new jobs being created is on the rise as more conventional jobs become obsolete in the face of rapid advances in technology. It therefore is the core of education for sustainable development to develop and build human capacity especially for young people.

<Table 1> Increase of the number of jobs in Korea

Year	1964	1986	1996
Number	1,500	10,451	11,537

Education will be the most important means of fostering an individual's competency and ability to adapt to the changes in the labor market. The job competency of an individual can be improved only if the opportunities for continuing education are kept open throughout his or her career.

The happiness and quality of life of an individual largely depend on whether the education he or she receives is congruent with his or her ability and interest and the end result leads to a profession of his or her choice. The individual's happiness and production of high-quality manpower will in turn be the cornerstone of national competitiveness and contribute to the establishment of an advanced social welfare society, justifying the need for reform in vocational education.

The Republic of Korea has achieved a remarkable economic development with the help of well-educated human resources resulting from the Korean's idiosyncratic zeal for education and its system. But looking into the future and the 21st century, all is not that rosy. The linkage between education and workforce is coming looser and looser. The spontaneous and natural flow of labor force from education to work place is distorted and blocked.

<Table 2> Imbalance between the need and supply of manpower by profession area (unit : %)

Category	Need of Industry	Supply by Universities
Humanities and Social Sci	39	43
Natural Sci & Engineering	60	62
Art	27	

Every year up to 100,000 young people join the workforce without any proper vocational preparation, while others who failed to enter college and had to join the workforce still cherish the hope of getting further education.

Vocational education, meanwhile, has the reputation of being a "second class" education chosen only by those who have failed to get admission to a college. And because the educational content does not meet the needs of the practical world, it has long been a source of complaint for businesses and some have gone as far as to disregard the various diplomas awarded by vocational schools. This underdeveloped state of the nation's vocational education is due to the lack of cooperation between the schools and businesses, central and autonomous provincial governments and among the various government agencies.

Thanks to these problems, the rate of economic participation of 15-19 years olds in Korea is only 10.7 per cent, the lowest compared with that of Japan (18.3 per cent), Taiwan (24.1 per cent), Singapore (28.4 per cent), Germany (43.1 per cent), and USA (55.7 per cent). The average age at which they earn their first pay check is about 28, probably the oldest among developed countries. In this respect, Korean education is not working well and does not fit the changing pattern of society. So it became necessary to make vigorous efforts to launch education reform, especially in the area of vocational education, in the so-called "New Vocational Education System Reform".

<Table 3> International comparison of youth economic participation (1990, unit: %)

Category	Korea	Singapore	Taiwan	Japan	Germany	USA
Age 15 - 19	10.7	28.4	24.1	18.3	43.1	55.7
Age 20 - 24	59.9	84.3	68.0	71.1	79.6	84.3
Age 25 - 29	91.7	93.8	96.1	96.1	87.0	93.8

The Directions and Outlines of The New Vocational Education Reform

The main objective of the vocational education reform is to establish a "Lifelong Vocational Education System" to realize a "Lifelong Open Learning Society." It will ultimately lead to the development of each individual according to his or her unique talent and interest as well as nurturing high-quality human resources while reflecting the needs of the labor market.

The reform of vocational education will be promoted in the following four directions.

1. From a blocked path to an open hope - Graduates of vocational high schools will be given opportunities to continue with their studies through Korea National Open University, junior college, polytechnic university, New University and

even up to graduate school while they keep working. To achieve this, the government will increase the budget for vocational education.

2. Competition and cooperation-based education system - A foundation will be laid for the realization of cooperation between schools and industries. At the same time, schools will be encouraged to compete with each other.

3. Emphasis on practical and ready-to-use skills - It will open the way for industries to participate in the evaluation and management of vocational education. Reorganization of the system will allow the active exchange of human and material resources between schools and companies.

4. Move from an "inefficient" educational system to an "efficient" one - The government's role will be to revise the qualification system to link schools with businesses and thereby integrate education and training; promote effective use of the latest multi-media and telecommunications technology to provide learners with low cost but high quality vocational education; increase the autonomy of each school; and strengthen the role and finances of the local autonomous entities.

Despite the large number of highly educated individuals in their 20's and 30's, the overall educational attainment of ordinary citizens is relatively low compared to their counterparts in developed nations. Currently, with respect to educational attainment the Korean workforce is as follows: 36 per cent with less than a high school education, 45 per cent high school graduates, 6 per cent junior college graduates and 13 per cent college graduates. If the current trend continues, the ratio will be 26 per cent, 50 per cent, 9 per cent and 15 per cent respectively by the year 2000. This means that we still have a long way to go before we are at the level of other developed nations.

In order to upgrade the current level of education to that of developed countries, a radical reform of vocational education is needed. To bring about this change, the government and businesses, as well as the educational and training institutions, have to combine their efforts and cooperate.

Following are the three main objectives to be accomplished by the year 2000.

1. Ensure that those who do not plan to enter college are given opportunities to receive proper vocational training in high school.

2. Ensure that vocational training at the junior college level will be available to those who desire it.

3. Ensure that those working who wish to improve their professional skills are given the chance to receive any vocational education or training they desire.

The Reform Programme of The New Vocational Educational System

Vocational education reform at the high school level

The advent of the information society has moved the centre of vocational education from the high school to the college level. Hence, vocational education at the high school level should play the role of basic education. The main focus of the reform will be aimed at enabling the individual learner to chart his future course based on his or her interests and talents and allowing him or her to select academic courses that reflect his or her unique needs. The result of this basic education will be continued at work and college. The following should be carried out:

Expansion of specialized high schools : The expansion of specialized high schools will be carried out to allow students to consider their interests and talents in deciding their future early in their lives and to help them become specialists in some field (e.g., electronic communications, design, popular music, etc.).

Integration and diversification of the high school curriculum : High schools that wish to do so can integrate and manage the curricula of both vocational and general high schools to enable students to choose from a wide selection of courses during the second and third year.

Expansion of opportunities for further education : A system must be established which ensures that graduates of vocational high schools will be given a chance to continue their higher education.

On-the-job training and academic curriculum : The scope of school-industry cooperation will be extended to provide students of vocational high schools with on-the-job training experiences. The duration, time and type of training will be managed flexibly.

Quality teachers in vocational education : As a measure to upgrade the quality of education for vocational high schools, personnel from various industries will be invited to conduct practical classes while in-service training for regular teachers will be enforced.

Modernization of facilities and equipment : The overall standard of facilities and equipment should be improved to increase their utilization and flexibility to meet the needs of the vocational schools and local areas. Both the central and local autonomous entities should continue to promote this modernization of facilities and equipment based on the above standard.

Financial support will be strengthened to provide more substance to the education of vocational schools and to attract students who want to develop their occupational aptitudes.

Occupational education at junior colleges, polytechnic universities and polytechnic colleges

Reform of junior colleges, polytechnic universities and polytechnic colleges : Since vocational education has now been shifted from high school to a higher level of education, the status of junior colleges, polytechnic universities and polytechnic colleges should undergo a change accordingly. These higher educational institutes should be strengthened and transformed into lifelong educational institutions for people of all ages. The following should be carried out.

Strengthening vocational and technical education at junior colleges : Junior colleges should play the role of fostering leading personnel needed at industries such as the small-and medium-sized companies. They should be supported in order to become the center of vocational education institutions that provide opportunities for further vocational education.

a) In order to strengthen the junior colleges' capacity for vocational education, programmes linking high schools and junior colleges (2+2), polytechnic or regular universities and junior colleges (2+2), and the Korea National Open University and junior colleges should be established. Moreover, opportunities to transfer among schools will be expanded.

b) A more specific example of cooperation can be the joint production of textbooks, faculty exchanges, and priority for students from corresponding schools in admissions selection.

Promotion of specialized junior colleges : This will allow the establishment of specialized junior colleges with just one or two departments to meet the needs of the rapid diversification and differentiation of industrial structures and jobs (e.g., specialized junior colleges for animation, advertisement, automobiles, fashion design and cooking).

Revision of the student selection process : To open the way for vocational high school graduates to further their studies at higher institutions, polytechnic and junior colleges and polytechnic universities will revise their student selection processes.

Strengthening the Role of Polytechnic Colleges : Polytechnic colleges should be permitted to register as legally independent organizations along with national and public junior colleges to establish the foundation for competition among vocational education and training institutes.

The new university system for people in industrial sites

The New University System will be introduced to raise the overall educational standard of the adult population engaged in economic activities; this is comparatively lower than that of developed countries. This system will enable them to further their education without leaving their place of work. The New Universities, to be managed

through the use of the Programme Network System, will be different from the existing vocational education institutions in the following aspects:

Those eligible for the programme are workers who will become students; The work place will become the site of practical training; and multi-media information technology and the distance educational system will be used.

Types of new universities : These universities will offer graduates of vocational high schools and junior colleges the chance to continue their studies through the Associate Degree and Bachelor's Degree programmes respectively.

Educational methods : The New Universities, which effectively link the industrial site with existing institutions of higher learning through the use of the distance educational system, have three main educational formulae.

Support for the establishment and management of the new universities : A different standard for the establishment and management of New Universities will be arranged.

Establishment of the virtual university : Juridical persons set up by consortiums formed by existing universities and professional graduate schools will be allowed to build and manage virtual graduate school programmes through the distance educational system. Persons who have finished such programmes will be awarded the "Specialized Master's" degree.

Specialized degrees

This will enable those working for industrial firms to receive further education in their specialized fields. The types of professional graduate schools need to be increased for the introduction of the "specialized master's" and "specialized Ph .D" degrees system. Individuals who have earned specialized degrees can be invited to teach at junior colleges, polytechnic universities, polytechnic colleges and New Universities.

Building the foundation for lifelong vocational education

The foundation for lifelong vocational education is built in order to support the formation of an open lifelong learning society essential in the age of information and knowledge. Through the establishment of this lifelong occupational education order, a new welfare society and a clear professional mentality of the people will be set in place. Support for lifelong education at different levels will be expanded to benefit each and every citizen, while special consideration will be given to employees of small-and medium-sized enterprises, self-employed businessmen, the underprivileged and others.

Provision of lifelong career information and counseling : This is to systematically help individuals discover early in life what their interests and talents are. Career-building competency of each person will be enhanced to prepare him or her for the age of information and knowledge.

Support of vocational education for women : There will be support for vocational education programmes to develop women's competency for work in an era of information and knowledge.

Expansion of vocational education opportunities for employees of small- and medium-sized enterprises and those who are self-employed : Support reeducation a further education for those working in small- and medium-sized enterprises and self-employed businesspeople who have fewer chances to receive reeducation compared to their counterparts in big companies.

Expansion of vocational education opportunities for the underprivileged : Vocational education and training opportunities for the underprivileged, who must be helped socially and educationally, should be increased to enable them to build meaningful lives.

Vocational education opportunities for recipients of special education must be expanded. Existing facilities for special education should be expanded to accommodate each and every underprivileged person by the year 2000.

Expansion of vocational programmes for adults : Vocational education, not only for adults who work for industrial firms but for those with little education, should be expanded.

Strengthening of vocational programmes for the military : The vocational competency of those who have already completed vocational education during their military service should continue to be developed. Vocational education attained through elite military technical educational institutions can be evaluated and linked to the curriculum of civilian institutions of higher learning through the Credit Bank System.

The tutorial system education recognized as an approved form of Schooling : Students will be able to receive education in traditional arts and other specialized fields through the tutorial system and accept that as a form of schooling (e.g., a tutorial under a person designated as a Human Cultural Asset).

Promotion of the educational and training industry : The following are included: encouraging nongovernment-invested education, enabling the innovative spirit in private vocational training institutions to influence public institutions, and developing the educational and training industry to enhance the appropriateness of public vocational education.

The job competency certification system : There is a step-by-step introduction of the Job Competency Certification System to objectively evaluate and officially approve the basic occupational accomplishments and performance of an individual. Unlike other certification systems, the purpose of this system is to provide a reliable document for an individual in his career-building.

The job competency certification system will target the common basic skills needed for all occupations. Job competency fields include languages, statistics, economics, business, culture, and conflict resolution. The approval standard, grading and classification systems will be carried out according to the special characteristics of each field. This certification system will be linked to the other technical certification systems to be used as a recommendation document for the student in his search for a job.

The education account system : A study will be conducted for the introduction of the education account system. Through the system, an individual's schooling, degrees, qualifications and work experiences will be comprehensively recorded and filed to issue certification as a part of the effort to encourage lifelong education, especially among the employed. The education account is a record of an individual's educational data on any education earned after his or her formal school education.

Reform of the certification system

Reform of the certification system : The certification system will be reformed to raise the competitiveness of the growing human resources by strengthening the links between education and the job market and upgrading the standard and direction of occupational education.

Increased private role of skill certification : Considering the government's limitation in managing the rapidly changing certification system and the reduced time span between the creation and disappearance of new skills, private organizations should be involved in the administration of the certification system. The national certification system and the private certification system should be mutually complementary to maintain quality control of certification.

Simplification of the national technical certification system : As the lines dividing technical skills become less clear with the advent of the era of information and knowledge, the types of qualification should be combined and the existing national technical qualifications should be simplified as follows: Application for the national technical qualifications will be open to everyone regardless of the person's level of education. The current status of "head skilled technician" will be maintained but "the skilled technician 2nd class" will be designated "skilled technician," while "skilled technician 1st class" and "technical expert 2nd class" will be designated "industrial technician."

Strengthening links between vocational education and certification : The link between vocational education programs and the qualification obtaining process should be strengthened to expand an adequate on-site education system.

Outcomes and Prospectus

The vocational education reform exerted a significant impact on the education system as well as the occupational training industry. Of the most notable outcome resulted from the vocational education reform is to move the ministry of education (MOE) work on the establishment of a new vocational education system. Upon the release of the reform plan in February 9, 1996, MOE broken down the reform agenda into the following 18 tasks.

- Increasing the number of specialized high schools
- Linking high school curriculum to primary and middle school curriculum
- Improving admission procedures to junior colleges and open universities
- Strengthening field-oriented education in vocational high schools
- Upgrading educational facility and financial support for vocational high schools
- Improving quality of education in junior colleges
- Improving quality of education in open universities
- Strengthening the role of polytechnic colleges
- Supporting establishment and operation of new universities and new graduate schools
- Introducing degree programs for professionals and establishing professional graduate schools for vocational education
- Providing lifelong career guidance and information
- Expanding opportunities for vocational education for women and the underprivileged
- Approving educational attainment of students trained through tutorial system
- Expanding opportunities for vocational training and nurturing vocational education and training industry
- Reorganizing national job competency certification system
- Reviewing the feasibility of education account system
- Encouraging legalization of national and public vocational training institutes
- Founding a fund for vocational training and financial support and tax benefits for vocational training institutes

Tangible outcomes have begun to surface. First, the legal foundation for the "era of open and continuing education" has been prepared. Three basic laws on vocational education and training has been enacted. The provisions include Vocational Education Promotion Law, Basic Law on Certification, and Korean Occupational Competency Development Institute Law, which will expedite improvements in vocational education. In addition, a legislation on the credit bank system was enacted to allow part-time registration to college on a test basis in December 1996.

Second, students in vocational high schools and industry workers now have opportunities to carry out further education beyond high school. These students hold priority in the selection process for colleges in related fields of study. Beginning 1996 graduates of junior colleges attained associate degrees. In addition, restrictions on internship have been relieved so that students can acquire skills through on-the-job training.

Third, a substantial investment has been made to facilitate the vocational reform. Approximately 500 billion won (\$550 million) is earmarked for vocational education reform projects - 7.7 billion won (\$8.5 million) on Vocational Competency Development Institute that has just opened; 120.8 billion won (\$130.4 million) on improvements in vocational high school facilities and curriculum; 109.7 billion won (\$120 million) on junior colleges.

Finally, the Ministry of Finance and Economy, Labor and Trade and Commerce is raising total of one trillion won (\$1.1 billion) for the Human Resource Development Fund by the year 2000. The fund is collecting 250 billion won (\$277 million) annually. The fund will be used to aid individuals who work in financially strapped small- and medium-sized enterprises, the poor and the underprivileged to receive vocational education.

Reference

- PCER(1997). *Education Reform for the 21st Century : To Ensure Leadership in the Information and Globalization Era*. Seoul : The Presidential Commission on Education Reform (PCER). The Republic of Korea

CHAPTER FIVE

THEMATIC RESOURCE PAPERS ON EDUCATION FOR ALL

D.A. Perera, Education Consultant, E.C.S

Vibeke Jensen, UNESCO Bangkok

Thongchai Chewprecha, IPST, Thailand

Soedijarto, Out-of-School Education, Youth and Sports
Department, Indonesia

R. Govinda, NIEPA, India

LITERACY, BASIC EDUCATION AND POVERTY ERADICATION

D.A. Perera

1. Sustainable Development in the Context of Poverty

Sustainable development is one which respects the right of all forms of life to exist on Earth. The present emphasis on maintaining bio-diversity recognizes that human beings may not continue to exist without other forms of life. (The last remaining small pox virus is still being kept alive.) Nor may one set of human beings survive at the expense of another.

Respecting the right of all forms of life to exist on Earth, which should be a defining characteristic of sustainable development, should be accompanied by the acceptance that all human beings, now and in the future, should have a good life with dignity. This should be accepted by ALL, the AFFLUENT as well as by the POOR. A major contribution of basic education to sustainable development is to gain this acceptance from ALL.

For the poor, at present, a good life with dignity is simply not there and the possibility of such a life in the future appears to be a dream. A very necessary condition for sustainable development is, therefore, the eradication of poverty which requires efforts on the part of both the poor and the affluent. Basic education may make another very significant contribution to sustainable development to the extent that it contributes to the eradication of poverty. It is, therefore, necessary to examine the causes of poverty.

2. Causes of Poverty/Some Features of the Poor

One has to try to understand the causes of poverty if an attempt is being made to eradicate it by whatever means. It is agreed that there is no one single cause of poverty. It arises due to a complex of interacting factors. It is also accepted that, where poverty is concerned, it is difficult to distinguish between cause and effect. What may be more useful is to list some features of the poor and then try to find out whether education can effect a change in them. It is also accepted that education by itself is not adequate. The poor need a total package if they are to significantly improve their lot. Education would be a very significant component of such a comprehensive package.

Features of the poor may be examined from two broad inter-related perspectives. One is with respect to themselves as persons. The other is with respect to the conditions under which they live. Taken as persons, the following features are associated with the poor:

- A low educational level, mostly illiterate.
- Large families.

- Lack of the specific knowledge and skills which may help them to improve their lot.
- A poor self-image, lack of confidence in themselves.
- Un-organized.
- Little choice about what they may do.
- Little capacity to cope with risks.
- Generally malnourished with high probability of falling sick.
- Lack resources, savings,....

With respect to the conditions under which they live, the following features may be listed:

- ◆ Inadequate access to basic services, general education, health, specific training, technical support services relevant to their means of livelihood, ...
- ◆ Marginalised. No place in the community. Not consulted on matters which affect them.
- ◆ Poor housing and conditions of living without access to safe water, sanitation.
- ◆ Largely rural. Eking out a living on inhospitable land.
- ◆ Victims of bureaucracy.
- ◆ Suffer from some of the national development plans which deprive them of access to common resources and displace them from their traditional habitats.
- ◆ Forced to participate in an economy on very unfavourable terms.

Some reflection on these features indicates the very significant role that education has to play. While it is very obvious that co-ordinated interventions in other sectors are also essential, even that would demand an educational input.

From the perspective of an educational intervention to assist the poor, there is one over-riding consideration. The poor cannot wait. They have virtually only today. They have no to-morrow. Any assistance of whatever sort should make an immediate impact on their daily life. Even getting a group of poor people to participate in a well-intentioned discussion is taking their time away from them. Educational interventions should result from actions to eradicate poverty. The two should be simultaneous and support each other. It is also very necessary that the poor perceive the situation, primarily, as one where action is being taken to lessen their poverty.

The concern with the present does not in any way imply that the interventions should be simply a reaction to the current situation. Both the poor and the affluent live in a fast changing world and some of the changes may make things worse for the poor. The proficiencies which are to be developed should be from this perspective also.

3. **Some Considerations in Designing Literacy and Basic Education to Better Serve the Poor**

Basic education is here taken as constituting the formal primary, the nonformal primary and literacy and continuing education programmes. Basic education has been with us for some time. Recent studies conducted by APPEAL have shown that it is not sufficiently oriented towards eradication of poverty and empowerment of the poor. While most curricula include content relevant to poverty, the objectives are nearly always confined to mere acquisition of items of largely un-related knowledge. No actions follow. This appears to be so even for literacy programmes for youth and adults.

This is essentially the same criticism which has often been made and continues to be made of the formal school curriculum, namely, that it is largely academic and does not develop in those who participate in it, the knowledge, skills and attitudes needed to improve their quality of life. If features of the poor are as listed above, can basic education make a contribution which is any better than what is being made now? These features are not a new finding. They are known and have been known for some time. And apparently basic education has had little effect in changing the features apart from the significant achievements made in literacy. Clearly literacy programmes on their present design appears to be inadequate.

What may be needed, in the first place, is to accept that basic education by itself is inadequate. It has to join hands with other interventions which require, apart from a facilitating policy framework, institutional capacities at the level of the poor to effect the co-ordination, if not the integration needed. Another change needed is to accept that tackling the features one by one is not likely to be effective. They have to be tackled as a group. In short basic education has to take note of poverty as a whole and not just this or that feature. But while the poor have common features as may be listed above, the particular mix in a given group is generally very different for that of another group. Different groups have specific needs and each group needs to be treated differently. The group needs to be treated as a whole so that organising them is facilitated. There is yet another consideration to be taken care of in the design, namely, the poor cannot wait and, hence, the impact of any intervention has to be immediately felt by them in a meaningful way. These may be summarised by stating that principles such as the following should guide the design and implementation of basic education for poverty eradication:

- * Basic education by itself is inadequate.
- * Poverty features have to be addressed collectively and not in isolation.
- * Different groups of poor need different programmes.
- * The benefits from the programmes should be almost immediate.
- * Develop the group collectively as a group.

It is necessary to examine, even if briefly, the implications of these for the actual designing and implementation of basic education programmes. If the needs of a specific

group are to be met, then it is best that the needs be treated as a whole and met in a manner to result in some immediate impact being felt and appreciated by the group. What is called for is a holistic design. This does not imply that it should be the same programme for all. Nor does it mean that there is no need for national-level guide lines.

This is more easily said than done. There are very considerable if not almost insurmountable difficulties in doing it. The single term "basic education" hides behind it the many different agencies involved with their overt and covert agendas. In most countries it is the state which provides the formal primary and, in general, communities have no say whatsoever in what happens in the formal primary school. In many countries it is the nongovernmental agencies mostly which provide nonformal primary education as well as literacy and continuing education. Their capacities differ widely. A feasible strategy may, therefore, be to concentrate on the literacy and continuing education component with an expanded role for the primary school.

The following conditions are among those which are very necessary for the execution of such a strategy:

- ◆ The existence of institutional capacities at the level of the community
 - ⇒ to study the community;
 - ⇒ develop suitable programmes with the participation of the community within whatever national guide-lines which exist;
 - ⇒ implement, monitor and evaluate the programmes; co-ordinate all programmes directed to the community.
- ◆ A policy framework which allows such capacities to develop and function at the local level.

The existence of institutional capacities at the local level does not necessarily imply that the "institutions" be those of the state. Existing community organisations may be supported and developed. An organisation of the poor themselves may be one such "institution". Basic education may support the development of such "institutions" if a facilitating policy framework exists. Empowerment of a community would mean in practical terms the emergence of such "institutions" at the community-level which can participate with state and other agencies involved in the design and management of programmes for them.

4. **The comprehensive, integrated approach of the Sarvodaya Sangamaya, Sri Lanka**

According to Sarvodaya, development should be **comprehensive** (social, economic and political development simultaneously with cultural, moral and spiritual development), **co-ordinated** and **result in a process of awakening**. Individuals awaken to the extent that they show respect for all life, translate such feelings into

action, gain dispassionate joy from engaging in such actions and are not discouraged by failure nor proud of success. Groups awaken to the extent that they share all their resources inclusive of their knowledge and skills, engage in pleasant interactions, engage in constructive activities and practice equality. This development is essentially sustainable.

Sarvodaya works in several thousand villages in Sri Lanka. In keeping with its philosophy its services to the communities are organised around three major programmes, namely, Social Empowerment, Technological Empowerment and Economic Empowerment. From the very initial stage, *it is the communities which make the decisions*. The Sangamaya assists in the implementation of these decisions through the training of village personnel; developing and strengthening village-level organisations which can speak for the village and become recognised legal entities; encouraging co-operative activities between villages; providing technical advice and services particularly with regard to water supply and sanitation; developing village-level savings leading to the establishment of village banks; training of village personnel to run them; providing extension services to those who borrow from the village credit schemes; promoting the use of solar energy, organic fertiliser and farming without pesticides; strengthening traditional cultural and religious practices which promoted harmonious living between groups of people etc. It is the community which determines its own programmes and progress.

The Sarvodaya approach, based on a faith in the essential goodness of people and the belief that the 'good' will prevail over the 'bad' given a suitable environment and encouragement, tries to address the immediate collective needs of the people as identified and determined by them. Whatever their urgent need, be it a road, or a well for drinking water, a child-care centre for their children, it is attended to largely with their own resources. For example, Sarvodaya offers a two-week course to train a village nominee (generally a young woman who has completed secondary school) to start a pre-school for the children in the village recognising the fact that communities do not like to wait. The Sarvodaya input is primarily educational. Of the development activities which takes place in a village community around 80 per cent are based on their own resources. There is no activity which takes place in a village community which is funded completely from outside. The community makes a contribution, however small.

Considering the whole of the Sarvodaya programmes, even in the economic and technical fields, they are primarily educational. For example, in developing a gravity-fed water supply scheme for a community, an initial requirement is that the community should monitor the flow of water in the spring under consideration for a year, for which of course, community nominees are trained. Community nominees are also trained to maintain the scheme. In the economic field, a community nominee is trained to manage the community's savings and credit scheme. Many of these have subsequently been converted into village banks managed by the community. At another level community youth are given a training in primary health care so that they may attend to simple needs of the community without their having to go to the nearest state dispensary or clinic. The

training uses both western and the local ayurvedic system. In its training of the trainers assistance is obtained from private and government doctors who volunteer their services. Some of the training is done in government hospitals.

The starting of a pre-school in a village is a good example of the Sarvodaya approach. The formal education system in Sri Lanka caters to children who are 5 years and over. Hence the state does not establish pre-schools. The state has no pre-school training institutes. The Open University runs a one-year diploma course for which a fee has to be paid. There are also private training institutes. The village does not have a trained person to run a pre-school. It can neither afford the fees for the course nor does a village community like to wait as long as one year to get started on something. Sarvodaya does not tell the village to start a pre-school. The village decides and Sarvodaya offers to train a nominee free of charge. The initial course is of two-weeks' duration. Sarvodaya accepts any nominee from the village. The nominee, almost invariably a young girl, has generally completed secondary school. Nominees at lesser levels have also been accommodated in the courses. There are at present more than 4000 pre-schools which have commenced in this manner. The pre-schools also serve as nutrition centres for the children and education centres for the village mothers. Through its network of district and divisional centres spread through out the country Sarvodaya offers follow-up services which are provided free. The village maintains the pre-school.

Sarvodaya assists the communities to make use of state services particularly in the health sector. Its field staff establish contacts between the community and health workers so that children are immunised, pregnant mothers attend health clinics, etc. Its extension arm in the economic field make extensive use of the state agricultural services by organising training sessions for farmers, introducing new techniques such as tissue culture for growing seed potatoes, etc.

A fact to be emphasized is that it is not the Sarvodaya Sangamaya as such which is doing the development work in the communities. It is the communities which are doing it. Sarvodaya plays a supporting role which is primarily educational. In terms of basic education, the Sarvodaya educational programmes constitute continuing education. The high literacy rate in Sri Lanka does not require literacy programme, though some programmes are conducted for disadvantaged women in some areas.

While the particular socio-economic-political conditions in Sri Lanka facilitate its work, inspite of some brief periods where it was made very difficult, it is not the case that the Sarvodaya approach is feasible only in Sri Lanka. There are communities in Bangladesh, India, Nepal which are following its philosophy and practices.

EDUCATION FOR SUSTAINABILITY: THE ISSUE OF GIRLS AND WOMEN'S BASIC EDUCATION DEFINITIONS:

V. Jensen

Two definitions of sustainability and sustainable development are suggested for consideration:

1. The Brundtland report on Our Common Future says, "*Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs*".
2. Within the development aid community the word sustainability has recently been given more narrow and more specific content: We talk about sustainability of projects and programmes and by that we mean the ability of a given project/programme/activity to continue when foreign aid is withdrawn.

In the following I am going to treat - in a very brief and succinct way - the issue of girls' and women's basic education from both angles.

A. Educating girls and women for sustainable development.

The Report "Our Common Future"¹ of the Brundtland Commission makes it clear that in order to develop a society that meets the need of all without compromising future generations ability to meet their needs, basic education has to be extended to all- boys and girls, women and men. "*Education should be geared towards making people more capable of dealing with problems of overcrowding and excessive population densities, and better able to improve what could be called "social carrying capacities. This is essential to prevent ruptures in the social fabric and schooling should enhance the levels of tolerance and empathy required for living in crowded world. Education can induce all these, and can enhance a society's ability to overcome poverty, increase incomes, improve health and nutrition and reduce family size"*². The Brundtland Report points out the serious gender gap in school enrolment and in literacy rates which still exist in many developing countries. Although the gap is closing world wide, many countries still have a long way to go before they can claim Universal Primary Education or can boast of a fully literate population. "*The main task of education policy must be to make literacy universal and to close the gaps between male and female enrolment rates*"³.

¹ Our Common Future, Report of the world commission on environment and development, 1987

² Our Common Future, page 111-112

³ Our Common Future, page 112

How to do this was not specified in the Brundtland report, but subsequent international meetings and conferences, notably the Jomtien Conference on Education for All and the Beijing Conference on women, have examined these questions in further detail and given recommendations and policy directions on these issues. International institutions like the World Bank, USAID, UNICEF, UNESCO and many national and regional institutions have carried out a considerable amount of research all indicating that educating girls is probably the single best investment a government can make.

Not only access to basic education for children and adults was emphasized in the Brundtland report, but also content and relevance. *Education should provide comprehensive knowledge, encompassing and cutting across the social and natural sciences and the humanities, thus providing insights on the interaction between natural and human resources, between development and environment*⁴. Implied in the Brundtland Commission concept is also that education for sustainability is a life long learning process that leads to an informed and involved citizenry having the creative problem solving skills, scientific and social literacy and commitment to engage in responsible individual and co-operative actions. "Lifelong learning" covers all education throughout life - from cradle to grave - pre-school education, formal schooling, non-formal education and continuing education.

The Brundtland Report was referring to the education situation world wide, but if we focus on the Asian Region only we realize that considerable differences exist in terms of access to education. Gender gaps have been closed or almost closed in many parts of South East Asia, but persist in a very tangible way in South Asia. Lots of advocacy, consciousness raising concerning the importance of educating girls and women has been carried out within the past ten years, and I think one can say that no Government or no Minister of Education will claim that girls' and women's education is not a priority in their countries. At the Asian and Pacific Conference of Ministers of Education and those responsible for economic planning in Kuala Lumpur in 1993, a Declaration was adopted calling on countries to *"ensure their education systems play a positive role in the promotion of women's status by developing targeted action plans, removing both women's illiteracy and barriers inhibiting their access to and retention in education"*

Quite clearly awareness at the political level has been created, but yet when it comes to changing the figures and making a tangible progress there is still a long way to go in some countries.

We need to examine carefully the gap between intention and action and make sure that the good intentions of most Governments be translated adequately into action, so that increasing access of girls and women to quality education which is geared towards sustainable development becomes a reality as quickly as possible. I'll elaborate further on this point below.

⁴ Our Common Future, page 113.F

One thing is of course to get more girls into school; another thing is to make sure that what they learn is of use to them and will enable them to take active part in society and participate in a sustainable development of their community. The mere fact that we are educating our daughters will already be a major achievement in curbing population growth. Numerous studies have been carried out, and I think we have enough evidence to support the statement that educating girls and women is the best and most sustainable way of slowing down fertility rates.

Furthermore, USAID has recently published a little booklet⁵ arguing "*that women's participation in non-formal (out-of-school) education and other associations has the same effect as formal schooling on demographic change (fertility and child health and survival).*"

As mentioned above, a first important step is to get girls enrolled in school and women to attend non-formal education programme, but we also have to make sure that what they learn is relevant to them and their community. Adapting curricula making to ensure that local environmental problems are highlighted - and not only in a theoretical way, but in a very practical and context related way - is therefore just as important as increasing access. A second step is to make sure that the curriculum, and the teaching of it, is developing young people with the capacity for analysing their own personal life situation, but in the context of the development their community and society at large. And we should make sure that these analytical and practical skills are equally transferred to boys and girls. Thus, curriculum revision and teacher training are areas where much more work has to be done.

B. Sustainability of action.

As mentioned above, the word "sustainability" has lately received a more narrow and more specific meaning in the world of development co-operation. For some time now donors have put a lot of emphasis on sustainability of projects or activities, meaning what is going to happen when external funds are withdrawn. Will the activity continue or will it just vanish like a drop of water in the desert? And this interest for what is going to happen when donor funds or external funds are withdrawn is understandable and justified. Too many efforts within all fields of development co-operation have been wasted because foreigners came in with foreign expertise and resources, but in many cases soon after they left there would be no trace of whatever activity they had been involved in, because they failed in involving the local population and understanding the local socio-cultural context. They do not transfer skills, and they do not make sure that local resources are mobilized to maintain on-going activity.

⁵Jeanne Moulton, Formal and non-formal education and empowered behaviour. A review of research literature, USAID, April 1997, page 1.

Many projects have been carried out during the years dealing with all aspects of basic education. Some pilot activities have been run by governments, but most by national or international NGOs. Some of these activities especially concerning girls and women have provided us with valuable experience in the field of analysing obstacles to girls' school enrolment or women's participation in non-formal education programmes.

We do have a very rich experience in what works and what does not work in providing basic education to girls and women. I dare say that thousands of experiences, pilot projects, experimentations have been carried out all over the world, and especially in Asia. We do know why parents do not enrol their girls in school, and why they take them out before they have even finished primary education. Reasons are many and diversified and have to be identified in each community and in close collaboration with parents, the girls themselves, and community leaders such as village chiefs, religious leaders, school head masters and teachers. Solutions tackling the key problems in each village and/or community have to be identified in collaboration with the same people. Therefore what really needs to be done in order to get more girls into school and keep them there in many cases is to install **decentralized planning and management methods** which allows for and even encourage **community involvement** and make it possible to implement changes suggested at the local level.

However, decentralized planning and management is easier to say than to do. It requires of course, first of all, political will at the central level to actually hand over control and power to lower levels. It also requires clear plans and definitions of what each level in the educational system hierarchy should be responsible for. Finally, it requires training of staff at all levels to attain a shared understanding of common objectives and goals.

The point I would like to make here is that the problem of under-enrolment and retention of girls in school cannot be solved in an isolated way. We have to look at the functioning of the entire system but it has to be done from the point of view of those who are underserved: girls in many countries, hill tribe children, children living in remote rural areas or other groups of children, who for some reason do not fit into the mainstream system which has been designed centrally and is implemented without taking into consideration local needs and socio-cultural specificities. If we do this we will realize that not only did we manage to improve the access of girls and other non-enrolled groups of children, but we also improved the quality and the retention for those who were already enrolled.

When it comes to non-formal education programmes for adolescent or adult women the link between enrolment and quality becomes even more obvious, because women simply don't have time for irrelevant or bad quality programmes. This doesn't mean what we are doing in the field of adult education programmes is perfect - still much more effort has to be invested in the design, planning and implementation of programmes which are of relevance to women's daily lives. We have to work on how to improve income-generating and small scale business training, and we have to work much more on the empowerment aspects of women programmes.

Excellent programmes have been implemented, yielding excellent results, but somehow it is not reflected to the extent it should be reflected in overall national figures. Progress has been made no doubt about it especially during the past ten years, but not as much as we could hope for and not as much as is needed to effectively empower all people to fully participate in a sustainable development for a common future.

The challenge facing us is how do we move from small scale activities to big scale making a real difference when it comes to attaining Universal Primary Education or improving on adult literacy rates. When it comes to girls and women, the time has come to change strategy, to move on from isolated women's projects, from isolated women's/girls' units in Ministries of Education or Adult Literacy Departments. Those units or projects focusing on girls and women only were the right thing to do when they were created five - ten - fifteen years ago. They still are perhaps in some countries. But in many countries it has also led to marginalization and isolation of the issue. Often these units did not get clear terms of reference, did not get sufficient political attention, were understaffed and inadequately financed. In some countries these units were only maintained because of donor pressure. And because of all these problems they did not have the expected impact. More attention now has to be paid to the reform of entire education systems making sure that systems are made flexible enough to accommodate the needs and requests of the poor and underserved. This means changing mentalities of lower level education authorities: school masters, district education officers, regional education authorities, and the executing levels in national ministries by training them to be more attentive to local demands and needs, and equipping them with negotiation skills in dealing with local communities.

The last point I would like to make is that paying more attention to local needs and requests, listening to local communities does not mean that we have to do everything they want. Communities tend in many cases to be conservative and to defend the status quo. Also, the spokesmen of communities are often men, and often men from the better off class or caste, and thus not always representative for the entire community. In fact many villages consist of several communities which we have to speak with in order to promote genuine community participation. What we are talking about is really a negotiation process : If you send your daughter to school we will teach her among other things to be a better mother or better housewife as often requested by communities: we will teach her (as well as your sons) the importance of hygiene, how to prepare and preserve food better, how to take care of and bring up children, how to protect the environment around the village, how to build wood saving cooking stoves and many other things which will not only improve the lives of the present generation but also preserve a future for coming generations. We will teach her to be a better housewife as long as we also teach her to reason, to solve problems, to use the best in herself, to be confident that her opinion is just as good as that of anybody else, that she is just as good as anybody else. Such a sensitization process will yield much more impact and be more sustainable than giving away free uniforms or other incentives, which are practised in a number of countries. Again this is not the easiest way to improve girls' access, retention and outcome of the school - it is a long and tiresome process - but I

believe it is the most sustainable way of promoting equity, social justice and harmonious sustainable society

SCIENTIFIC AND TECHNOLOGICAL LITERACY AND SUSTAINABLE DEVELOPMENT

Thongchai Chewprecha

Executive Summary

The paper discusses the prevailing concern for sustainable development and its interconnectedness with science and technology literacy encompassing societal concerns such as environment, health, nutrition, energy and other human basic needs. It also identifies guidelines to establish the country's scientific literacy programme, recognizing the recommendations of major International Conferences, especially the World Conference on Education for All held in Jomtien Thailand in 1990, and the United Nations Conference on Environment and Development, the Earth Summit at Rio in 1992. The paper argues that if sustainable development is to be attained the total population has to be made literate in science and technology.

Indicators of Development and Quality of Life

Each country aims to raise the standards of living of their own people through economic development - to become wealthier aiming for a better quality of life. However, economic development has brought about many social and environmental problems, such as widespread destruction of rain and mangrove forests, irreversible losses of wildlife and natural resources, farmlands around urban areas transformed into housing estates, air and water pollution raised to alarming proportions etc. In fact, the advance aspects of development has affected the quality of life of a large number of people.

Table 1: Indicators of Wealth of Some Countries

Country	GNP	Current Account Balance	Foreign Debt
Japan	\$ 33,090	\$ 76.6 b	0
Singapore	\$ 30,500	\$ 14.2 b	0
USA	\$ 28,480	- \$ 158.7 b	\$ 814.0 b
Germany	\$ 25,860	- \$ 9.8 b	0
South Korea	\$ 10,730	- \$ 19.7 b	\$ 34.7 b
Malaysia	\$ 4,460	- \$ 5.2 b	\$ 21.1 b
Thailand	\$ 2,970	- \$ 14.5 b	\$ 88.0 b
China	\$ 655	\$ 2.1 b	\$ 116.3 b
India	\$ 360	- \$ 5.1 b	\$ 93.8 b
Vietnam	\$ 270	- \$ 2.9 b	\$ 25.6 b

Source: Asia Week, August 15, and October 17, 1997

If one accepts that GNP, Current Account Balance, and Foreign Debt are valid indicators of the wealth of the country, Table 1 would show which country is the wealthiest, and which one is the poorest.

The above table has a strong implication on the economic side - but has no indication of its effect on people's quality of life and sustainable development.

Similarly, if Life Expectancy, Infant Mortality, Persons per Doctor, and per TV are indicators of the quality of life as shown in Table 2, do we accept that sustainable development has been achieved?

Table 2: Indicators of Quality of Life of People in Some Countries

Country	Life Expectancy	Infant Mortality	Persons per Doctor	Persons per TV
Japan	80	4	545	1.5
USA	78	8	387	1.3
Singapore	77	4	667	2.0
Germany	76	6	333	1.8
South Korea	72	8	855	2.1
Malaysia	72	11	2,063	5.5
Thailand	69	26	4,361	13.5
Bangladesh	57	85	12,500	380.0
Nepal	55	81	12,612	174.0
Afghanistan	45	164	7,358	390

Source: Asia week, July 18, 1997

Many questions could be raised with regard to the two tables presented - as a profound re-thinking has been taking place - precipitated by the major International Conferences, "that there should be a shift from economic growth to sustainable development, and the role of education reaffirmed." This questions further clarifies our own understanding of quality of life as based on economic development alone.

Quality of Life for many people means satisfying ones basic physiological need as shown in Maslow's 'Hierarchy of Needs.' (Figure 1)

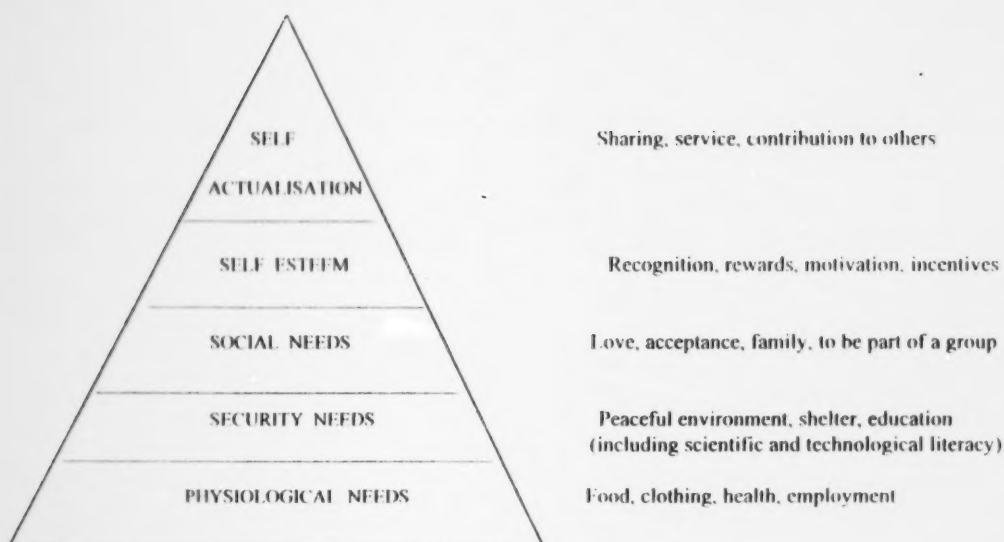


Figure 1: Maslow's Hierarchy of Needs

The priority needs being identified include: food, water, energy, health and sanitation, clothing, development of appropriate (useful) technology, prevention of drug abuse, alcoholism and HIV/AIDS, safety, reproductive health, environment concerns, and generation of employment avenues. The issue therefore is: how do we satisfy these needs for ourselves and leaving enough for the future generation?

Issues Related to Sustainable Development

Sustainable development not only refers to economic development, but more importantly to human development. The main source of income of many developing countries is the export of raw natural resources with small processing to gain value added. For example, some countries export logs instead of furniture, others export rubber and import vehicle tires made of their exported rubber, or tin ore and import products made of tin. It is clear that those countries receive very little value from their own natural resources. In addition, the development in many countries does not have a good sustainable plan to use their natural resources, as people have very low awareness about the importance of natural resources and the consequences of poor plans for using natural resources. Many natural resources are destroyed after only a few year's use, leaving pollution, deforestation, and barren lands which can not be reclaimed.

Most industries in the developing countries rely on external resources, including human resources, and technology even if they have the raw materials. Those countries unfortunately have not developed their own human resources, thus relying on imported personnel to provide for technology transfer. The developments taking place have little value added. These are development based on poor planning in the use and protection of natural resources; relying on external investment, imported human resources, imported technology, and poorly educated personnel. This form of development which increases the gap between rich and poor, ignores human rights, equity and lack of social responsibility, is **not sustainable development**.

Development which looks into the future consequences to the environment, to natural resources, to pollution, and to the survival and life of future human generations is sustainable development.

Scientific and Technology Literacy as a Key For Sustainable Development

One recommendation put forward by the 1990 Jomtien Conference is stated as follows: "the need for a world community of scientifically and technologically literate citizen"(and in basic environmental and health education). In a way UNESCO and its partners including my Institute, the Institute for the Promotion of Teaching Science and Technology (IPST), picked up this recommendation by launching in 1993, Project 2000+: Scientific and Technological Literacy For All. The ultimate purpose of Project 2000+ is to encourage everyone to become informed citizens and be part of an enlightened society for sustainable development.

Studies have shown that the quality and quantity of science and technology education has much to contribute to sustainable development. It could be said that the main cause of non-sustainable development is the lack of well educated personnel, especially in science and technology education. There is a very urgent need therefore, to promote science and technology education at all levels, if one really aims for sustainable development.

In general, there are two important aims of science and technology education that every country needs to consider. First is an education to **provide scientific and technological literacy for all**. All citizens need to be provided with an equal opportunity to learn and develop their scientific technological literacy. They should be able to apply scientific and technological knowledge and understanding for social benefits and in daily life, and be part of a scientific and technological culture. They should make appropriate use of natural resources and protect the natural environment effectively. All citizens also need to be trained to have both potential and spirit in developing their creativity, in acquiring and processing knowledge, in rational thinking, in problem-solving and in decision making. The citizens should also develop a caring and compassionate attitude towards themselves, towards others and to their physical environment.

To achieve the stated aim, it is necessary to educate learners at all levels from primary education through tertiary and also people from all walks of life by providing an opportunity to undertake science and technology study effectively throughout life. Besides, it is essential to promote knowledge and understanding for those who play important roles in policy making including civil servants, state enterprise personnel and, especially, the politicians. Enough data and information in science and technology must be provided for them to use in policy and decision making.

The second is to **provide adequate education and support for talented students in science** in order to enhance their interests and capabilities in pursuing science

and technology careers. Being able to strengthen the country's scientific and technological competency, means the ability to create scientific and technological knowledge to lead to a productive society, a decrease in dependency on external technology and expertise.

Suggested Guidelines to Establish a Country's Scientific Literacy

Some proposed guidelines to establish a country's scientific literacy are listed below:

1. To promote youngsters at all levels to receive an effective quality education in science and technology, appropriate to life as well as to meet economic, social and environmental needs. This could be achieved by:

- Providing sufficient equipment, materials and laboratories for teaching and learning;
- Developing science information networks for all schools and community centres;
- Strengthening the teaching and learning of science, especially at the primary level;
- Providing broader courses of study in science, highly dynamic and appropriate to individual learners, the local situation and the changing conditions.

2. To promote the production and improvement of the quantity and quality of science teachers. This could be achieved by:

- Providing opportunities for science teachers to enjoy lifelong self-development e.g. participating in seminars, workshops and training;
- Promoting professional teacher associations, for example, Chemistry Teachers' Association, Biology Teachers' Associations, Physics Teachers' Association, etc. in order to develop professional academic activities;
- Promoting the development of media for science teacher self-development e.g. professional journal, self-training kits, electronic media;
- Encouraging persons with high potential and skill to become teachers of science by providing grants, as well as other incentives.

3. To create opportunities and assist people from all walks of life and all age groups to obtain continuing education in science in order to lay the foundations of creativity, decision making, problem solving, improved quality of life, professional enrichment, and improved economic and social conditions. These are achieved by:

- Constructing systems to disseminate knowledge and information in areas of science for the general public through television, radio, newspapers and other mass media;

- Constructing science centers with hands-on activities to cater to all members of the community.
4. To promote specific programs in science and technology for talented students by:
- Setting-up science schools for the development and promotion of talented students;
 - Developing enriched curricula and challenging activities specifically for talented students in science;
 - Supporting the participation of talented science students in regional and international science activities.
5. To provide recognition and incentives to science teachers conducting classroom research and using research to develop their own culture of science teaching and learning by:
- Helping science teachers to gain knowledge and skills in doing research in science education, especially classroom research;
 - Promoting and initiating conferences and seminars for science teachers to disseminate research results and learn from each other;
 - Funding research work rewarding superior research in science education.
6. To reinforce regional and international cooperation in the teaching and learning of science by:
- Constructing national data and information centers in science as part of worldwide and regional networks;
 - Providing teachers and core personnel in science education with opportunities to participate in international and regional conferences, study visits and training;
 - Encouraging countries to serve as the host country in international and regional conferences in science education.
7. To promote the private sector to play a role in setting up science centers and produce high quality science equipment and teaching media. This is achieved by:
- Promoting and cooperating with the private sector to set up modern and self-supporting science centers in urban areas and in selected rural areas;
 - Promoting and cooperating with private sectors to set up factories to produce high quality science equipment and teaching media.
8. To strengthen the teaching-learning of science for general education at the tertiary level by:

- Promoting the development of science for general education at tertiary level;
- Promoting the coordination of science education programs between secondary and tertiary levels.

9. o revise regulations and guidelines in order to promote science education by:

- Revising assessment regulations and university entrance examination systems to emphasize practical work;
- Setting-up regulation about the number of students in a science class appropriate for a student-centered /participatory approach and hands-on activities;
- Revising the regulations and process of tax-free purchases of equipment and materials for teaching and learning science.

Conclusion

In conclusion, I would like to reiterate by emphasizing that we need a concerted effort to take an integrated view of science and technology education and promote scientific and technological literacy for all, if we are sincere in our desire to attain sustainable development.

COMMUNITY PARTICIPATION AND EMPOWERMENT: A KEY TO ACHIEVING EDUCATION FOR ALL IN THE PERSPECTIVE OF SUSTAINABLE DEVELOPMENT

Soedijarto

Compared with developed nations developing nations face more complex problem in its development programmes. At present, even fifty years ago, most developed nations had achieved a stable socio-economic political system. To achieve this stage of development they have experienced industrialization for centuries. The educational development in these countries has developed evolution parallel with the development of other sectors of the nation societal system. Thus, at present, educational programmes in these countries have been supported by the economy of the country. The conditions are extremely different for developing countries. When developed countries started their industrialization about three centuries ago, Indonesia started being colonized. Thus, after almost three centuries of colonization, when Indonesia proclaimed her independence, fifty two years ago, she found that education for the people was still limited to the elite. Economic infrastructure had not developed, political systems needed to be developed. On the other hand the world has been controlled by the international trade, and global politics will the laws and regulations to be followed by developing and developed countries the same. In this context the strategies for educational development,

as part of national development programme, must to be developed in accordance with the conditions of being a developing nation. In this regard this paper is going to inform how Indonesia as a developing nation developed strategies to run an educational system as a part of national development programme, especially with regard to education for all, basic education, illiteracy eradication, continuing education, and early child development, despite its limitation in resources.

1. Universalization of Basic Education

As a developing nation, Indonesia should simultaneously develop all aspects of the society, economy, politics, culture, science and technology as well as its defence system. Since the second part of 1960s, when political problems were settled, Indonesia embarked on planned national development with the economy, including its infrastructure, becoming the core of the national development programme. In the strategy of national development that concentrates on economy, the government budget for education has never been above 3 per cent of GNP. However, the government never neglected the significance of education as the most strategic component of national development. In this context the question is how to run a programme of national priority within a limited budget. Stemming from this dilemma, Indonesia's political leaders generated a grand strategy that relied on Political and Social Mobilization.

a. *The Presidential Instruction on Primary School Education*

In 1973, eleven years before the launching of universalization of primary school for all children of 7-12 year of age, the President launched a special program known as the Presidential Instruction on Primary School Education. With this special decision the government was ordered to allocate special budgets for: (1) building new schools throughout Indonesia; (2) renovating schools; (3) building the new classrooms; (4) training and recruiting teachers; (5) building houses for heads of schools and schools guards; (6) producing textbooks and other learning materials; (7) providing library books; (8) providing science, and mathematics learning equipment; and (9) government subsidies for private schools.

Eleven years after the implementation of the Presidential Instruction, the government launched compulsory education for children of 7-12 years of age. With this decision, announced by the President of the Republic Indonesia himself, the impact was not only that the budget allocation was getting bigger but the support from the communities to make the programme successful were also more mobilized. Through this strategy, by 1994 the participation rate of children age 7-12 has reached 93.5 per cent.

Table 1: Primary Level Education: Intakes, Enrollments, Drop-outs
And Graduates, 1973-1995

Description	1973	1980	1985	1988	1994
1. Annual intake (In millions)					
(New entrants to grade 1)	2.5	4.4	4.2	4.5	4.2
a) SD	0.7	0.6	0.5	0.6	0.6
b) MI	3.2	5.0	4.7	5.1	4.8
c) SD + MI					
2. Total enrollments (in millions)					
(grade 1-6)	13.1	22.5	26.5	26.7	26.3
a) SD	2.7	3.2	3.4	3.4	8.4
b) MI	15.8	25.7	29.9	30.1	34.7
c) SD + MI					
3. Annual graduates (in millions)	1.1	2.0	3.4	3.6	3.5
a) SD	0.2	0.3	0.2	0.2	0.3
b) MI	1.3	2.3	3.6	3.8	3.8
c) SD + MI					
4. Annual drop-outs (in millions)	NA	1.1	1.1	1.2	1.1
(SD pupils only)					
5. Graduates continuing to lower	0.7	1.3	2.1	2.2	2.1
secondary level (in million) (SD					
graduates only)	64.6%	81.9%	87.8%	91.0%	93.5%
6. Net enrolment rate (SD and MI)	105.0%	115.0%	121.0%	116.0%	110.3%
7. Gross enrolment rate (SD and	NA	4.9%	4.1%	4.5%	3.9%
MI)					
8. Drop-out rate (SD only)	NA	NA	78.0%	75.0%	80.0%
9. Completion rate (critical survival	59.0%	74.0%	65.0%	68.0%	62%
rate) (SD only)					
10. Continuation rate (SD only)					

Source: Appendix to Presidential State Address at the Session of the People's Representative Council (DPR), 1982; Table XVI-1,2 and 3; 1985, Table-XVI-1,2 and 3; 1989, Table XVI-1; and Education and Cultural Research and Development Agency of the Department of Education and Culture, Primary School Statistics, 1989/1990, 1993/1994.

NA: not available

With this level of development, the government feels that it is time to implement the Education Law of 1989 that dictates 9 years basic education, 6 years primary and 3 years lower secondary schools, as the minimum education for all Indonesian citizens. The decision to launch the 9 years basic education as compulsory/universal was conducted by the President of the Republic Indonesia on the occasion of Commemorating Nation Education Day, May 2, 1994. The impact of the Presidential decrees and Presidential speeches on education as mentioned is not only on the budget allocation from the central government but also on the budget allocation from local government, provincial as well as district. Not only that, Presidential decrees, and Presidential official speeches are having very positive impacts on social mobilization from parents, community leaders, NGOS, and other social organizations to support the implementation of the decision to make basic education compulsory. A movement such as Foster-Parents Movement, PKK movement, are building private schools, religious as well as general schools. They are mostly motivated to follow the decrees and official speeches of the President of the Republic Indonesia.

b. National Education Day as the Annual Event as the Medium of Political and Social Mobilization.

There are various fora on which President of the Republic of Indonesia as the Head of State and Head of Government delivers his official messages, such as National Independence Day, the Budgetary Proposal message before the General Assembly of Parliament, various national days, as well as speeches before national conferences organized by political, social and/or professional organizations. With regard to the Presidential messages on education, the National Education Day on May 2, and the International Literacy Day on September 8, are the special fora where the President of the Republic of Indonesia delivers his official message as Head of State as well as Head of Government. This ceremony, beside being utilized by the Government, especially the President to deliver official policy statements, is also being used to present awards to heads of district, heads of divisions of education at the provincial and district levels, NGO leaders, teachers, community leaders, as well as district military commanders, who have been evaluated as the most successful in efforts to achieve the national target of educational programme in their locality. The impact of this events has been recognized as very significant in mobilizing funds and forces to make it possible to achieve educational targets set by the central government. Examples of these are: 1) before the Government decision through the Presidential Speech on May 2, 1984 the participation rate of primary school in 1983 was 88.56 per cent by 1985, 89.04 per cent; and 2) The retention rate up to grade six by 1983/1984, 66.7 per cent, by 1985/1986, 77.2 per cent and by 1994/1995, 81 per cent.

As mentioned, by 1994, on May 2, 1994 the President announced officially that from 1994/1995 the 9 years basic education will become, compulsory/universal. The impact was the improvement of the gross participation rate of Lower Secondary School from 58 per cent in 1994/1995 to 68.04 per cent in 1996/1997. Thus the Presidential Speech has dramatically increases the budget allocation at national (for Lower Secondary School from 500 million US dollars in 1993/1994 to almost 1 billion US dollars in

1996/1997), as well as at the provincial and district levels.

c. Establishment of a Working Committee for Compulsory Education

As the immediate follow-up to the National Education Day speech of the President, a Presidential Instruction known as "Instruksi Presiden" No. 1, 1994 was issued. This Presidential Instruction orders the Coordinating Minister of People's Welfare (a senior Minister who coordinates the works of the Minister of Education and Culture, Minister of Health, Minister of Religious Affairs, State Minister of Population and Family Planning) to establish a Special Coordinating Body at Ministerial level to undertake planning, evaluation, supervision, and monitoring of the 9 years basic education compulsory program as a national movement. This included not only Ministers under his coordination but also other Ministers, such as Minister of Public Works responsible for school buildings, the Minister of Post, Telecommunication, and Tourism responsible for communication networks, the Minister of Land Administration, the Minister of Transmigration, and the Minister of Home Affairs; and the Committee at the Provincial levels (under the leadership of the Governors), the Coordinating Committees at the District levels (under the leadership of the Head of the Districts), up to the Coordinating Committees at Sub District levels as well as village levels. This Presidential Instruction means that success of Compulsory Education Programme is not only the responsibility of the Minister of Education and Culture but the responsibility the whole society to the village levels with this mechanism and reinforcement strategy through competition among districts to win annual awards from the central government, compulsory education as a national movement has been remarkably, as shown in statistical tables in the previous sections as well as in Table 2.

Table 2
The Development of Gross Participation Rate of General Lower Secondary School (GLSS) and Islamic Lower Secondary School (ILSS) 1994/1995-1996/1997

No	Province	Student + GLSS + ILSS			Gross Participation Rate			
		1994/95	1995/96	1996/97	Annual Increase	94/95	95/96	96/97
1.	Jakarta Special Terr	502.779	527.217	538.712	17.967	90.77	95.61	98.47
2.	West Java	1,340.04	1,452.46	1,586.57	123.264	49.17	52.74	57.39
		4	5	1				
3.	Central Java	1,206.71	1,322.96	1,435.10	114.194	59.29	65.54	72.06
		6	1	4				
4.	Jogja Special Prov.	164.103	172.264	175.385	5.641	91.38	99.75	105.4
								6

5.	East Java	1,249.21 9	1,367.18 0	1,513.61 9	132.200	58.07	63.83	71.49
6.	Aceh Special Prov.	157.603	172.119	187.313	14.855	58.61	63.02	67.48
7.	North Sumatera	616.998	645.286	679.918	31.460	73.37	76.30	80.04
8.	West Sumatera	213.906	233.897	252.743	19.419	65.94	71.97	78.08
9.	Riau	156.743	179.199	201.931	22.594	55.96	62.20	68.47
10.	Jambi	90.210	99.989	109.687	9.739	53.89	58.10	62.61
11.	South Sumatera	262.762	290.706	325.000	31.119	50.39	54.93	60.56
12.	Bengkulu	60.336	64.637	68.996	4.330	56.92	56.46	62.44
13.	Lampung	273.614	306.122	337.274	31.830	56.17	62.41	68.44
14.	West Kalimantan	120.874	133.632	147.449	13.288	46.07	49.99	54.07
15.	Central Kalimantan	58.209	64.463	71.345	6.568	49.37	53.10	57.58
16.	South Kalimantan	100.126	108.148	116.710	8.292	52.20	56.77	61.85
17.	East Kalimantan	101.982	109.560	118.765	8.393	66.14	68.91	73.27
18.	North Sulawesi	104.049	110.703	120.891	8.421	57.11	61.20	67.80
19.	Central Sulawesi	71.155	79.105	89.249	9.047	48.54	52.25	57.80
20.	South Sulawesi	288.948	313.208	337.444	24.248	53.55	57.76	62.04
21.	South East Sulawesi	68.407	78.879	98.391	10.492	54.81	60.21	65.63
22.	Maluku	100.356	111.208	121.459	10.552	65.42	70.21	75.61
23.	Bali	131.697	137.355	143.979	6.141	72.05	76.39	81.76
24.	West Nusatenggara	133.056	146.930	164.536	14.740	48.74	52.72	58.08
25.	East Nusatenggara	110.785	124.406	140.467	14.841	44.55	49.08	54.21
26.	Irian Jaya	69.637	73.500	81.226	5.795	52.60	52.73	55.29
27.	East Timor	22.850	25.467	29.306	3.228	41.70	42.80	45.65
	Indonesia	7,777.16 4	8,450.60 6	9,184.47 0	703.653	58.02	62.67	68.04

Source: Central of Information of the Office of Educational and Cultural Research and Development of the MOEC

d. Foster Parent Movement

Indonesia called the Compulsory Education Programme a movement, because with the limited budget due to many programmes to be financed simultaneously by the government, the government recognized that although education was free for tuition, to attend school, parents needed to buy school necessities, such as clothing, note books (textbooks are distributed freely), and other necessities for children to go to school. Due to this condition about two to three per cent of children of primary school drop-out before 4th grade. For this reason, since 1984 there has been a social movement organized by a Committee known as Gerakan Nasional Orang Tua Asuh (GNOTA = National Foster-Parent Movement). At present the movement is chaired by the daughter in-law of President Suharto, Mrs. Halimah Bambang Triatmodjo. This movement has formed

Committees from the national level to the village levels. The main responsibility of a committee is to collect donations from various sources (organizations, companies, as well as individuals) and to distribute through a banking system to children from poor families that need the support to enable them to attend school regularly. Beside the organized movement through the appeal of the President, a less organized one was also available. Many people on a personal basis, or from his/her social organization locally give scholarships directly to the needy, sometimes more substantial in terms of the amount of money offered. With this movement about 600.000 students of primary and lower secondary schools have received the support needed to continue their education.

It is recognized that it is not due to incapability that some cannot attend school regularly but due to the demand from the family to help their parents in taking care of their younger siblings or helping them to earn money for living. Thus, only giving money will not be sufficient to keep them attending school. For this reason, since 1994/1995 the Government developed other alternative delivery systems by developing Open Lower Secondary School and Packet B Equivalency Programmes for those who cannot continue their education to Lower Secondary School, and Packet A for those leaving primary school before grade 4. With all these movements it is to be expected that by the year 2003 the universalization of 9 years basic education will accomplish the mission of helping about 85 per cent of the children age 7-15 to complete 9 years basic education. That is the time when Indonesia enters the AFTA (Asean Free Trade Area).

2. Illiteracy Eradication

It is our conviction that unless we can make all school age children attend and finish 6 years of primary school, we will always be having problems of adult illiteracy. Thus, the commitment to implement compulsory basic education successfully has, in itself, a strategic meaning for the eradication of illiteracy in the future. However, we also do recognize that unless parents understand the importance of education it is difficult to motivate them to have their children to attend school or to get an education. For this reason, the government keeps emphasizing that the basic literacy programme is one of its priorities.

How does Indonesia develop strategies to eradicate illiteracy? There are two measures to be explained in the following sub-section. However, before coming to this matter it is important to note that the success of this programme is due to our inherited cultural value on the importance of serving the needy without consideration for personal and material gains or benefits. The cultural value expressed in the spirit of "*gotong royong*" (mutual assistance social system), has been mostly supported through the community participation and volunteerism.

a. Integrated and Joint Efforts Between the Armed Forces and the Civilians to Combat Illiteracy.

As a part of preparing for the 21st Century and to support the implementation of the compulsory 9 years basic education movement, on September 25, 1994, on the Commemoration of International Literacy Day, the President of the Republic of Indonesia officially declared that before the year 2000 there should be no more people in Indonesia, especially between the age of 10 to 44 that are illiterate (see Table 3 on status of literacy development).

**Table 3: Illiteracy Among Population Age 10 Years and Above
By Age Category and Gender, 1980-1994 and 1996**

Age Category and Gender	1980		1990		1996	
	Number of illiterates (in thousands)	%	Number of illiterates (in thousands)	%	Number of illiterates (in thousand)	%
<u>10-44 years</u>						
Male	5.481	13,7	2.835	5,5	2.260	3,9
Female	10.794	26,2	5.736	10,9	4.643	7,75
Male + Female	16.275	20,0	8.571	8,2	6.903	5,9
<u>45 years and above</u>						
Male	4.859	43,4	4.093	33,9	3.868	21,39
Female	8.952	76,2	8.830	56,4	8.754	47,42
Male + Female	13.811	59,8	12.923	45,2	12.622	34,4
<u>10 years and above</u>						
Male	10.340	20,2	6.928	10,4	6.128	8,1
Female	19.746	37,2	14.566	21,3	13.397	17,1
Male +Female	30.086	28,7	21.494	15,9	19.525	12,6

Sources: Central Bureau of Statistic (CBS), Census 1980, 1990 1996

As has been mentioned, the Presidential official message is regarded as an order by all governmental agencies and as a serious appeal to the communities and non-governmental organizations to take action to achieve the target stated by the President.

Thus, it is an effective instrument for political mobilization in making the programme successful.

As a follow-up to the Presidential official message of 25 September 1994, with regard to completing the illiteracy eradication by the year 2000, the Minister of Education and Culture, the Minister of Home Affairs, the Minister of Religious Affairs and the Commander-in-chief of the Armed Forces issued a Joint Decision to plan an integrated joint programme to combat illiteracy under the popular name OBAMA (Operasi Bhakti ABRI Manunggal Aksara = Armed Forces Civic Mission Operation to Combat Illiteracy). The considerations behind this joint decision are: (1) the smaller the number of illiterate people in the communities the more difficult to detect; (2) in modern times to be literate only at the primary school level has not been felt as relevant to the need to improve the quality of life, thus it is difficult to motivate an illiterate adult to participate in a learning programme helping him or her to be literate; and (3) unless we can motivate the adult illiterates it is difficult to make them participate.

Since the Indonesian illiteracy rate has been relatively small in percentage terms, it is very difficult to run the programme as before, that is only by the Ministry of Education and Culture supported by volunteers. The involvement of the Armed Forces, the local government, and the religious leaders will help people to perceive that the movement is not only the concern of the officials of education but the concern of all parties in the government as well as in the communities. How does the new movement divide responsibilities among the key players in the campaign? They have divided the responsibilities as follows:

(1) The responsibility of the Armed Forces Personnel

- Armed Forces personnel should mobilize learners as well as tutors.
- These personnel should integrate literacy programme into other development projects of villagers and slum dwellers.
- Where teachers cannot be found, such as in remote areas, Armed Forces personnel themselves should become the tutors.
- Armed Forces personnel, together with other tutors, should form the learning groups; they should record the presence of learners and tutors, as well as progress of learning groups.
- Armed Forces personnel should identify difficulties encountered by the learners, and motivate them to continue learning; again, they should report progress during periodical meetings with the heads of respective villages.
- Armed Forces personnel should send all records, as well as the problems encountered in the eradication of illiteracy, to the central government.

(2) The Responsibility of the Religious Leaders

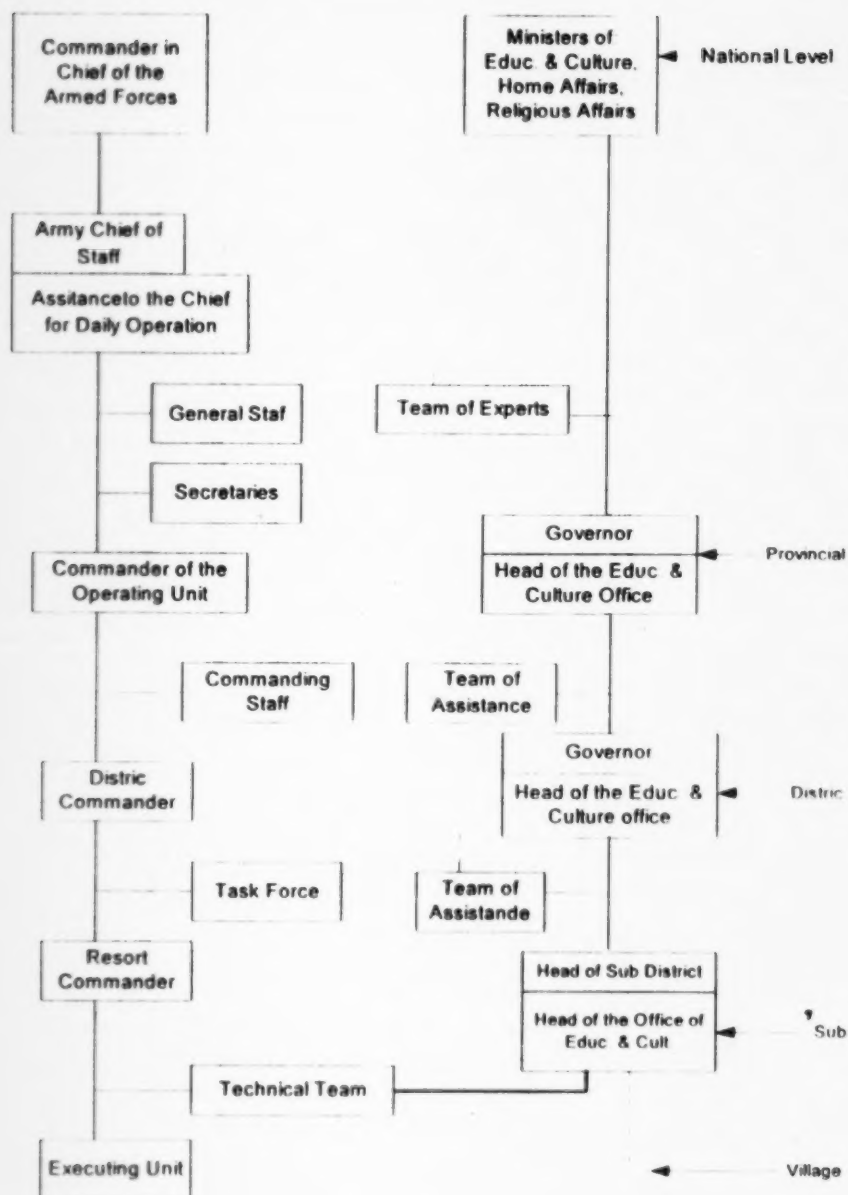
- The religious leaders should recruit tutors from their own ranks.
- They should motivate the illiterates to learn, by introducing Al-Quran verses highlighting the importance of learning and increasing knowledge.

- The should identify the place of learning in their own setting.
- (3) The Responsibility of the Ministry of Education and Culture
- Provision of books or supplementary reading materials.
 - Provision of teaching manuals, and training of teachers/tutors
 - Provision of administrative tools for learning.
 - Provision of honoraria for tutors and learning funds for the learners
 - Provision of learning-strategic models and new learning-teaching processes.
- (4) The Responsibility of the Ministry of Home Affairs

The Ministry of Home Affairs, through its own officials at the respective administrative levels, should strongly enhance the process of teaching and learning by, among others, the provision of adequate and suitable places for learning.

The working mechanism of this programme from national to village levels can be seen in the following organigram:

WORKING MECHANISM



Legend

————— Line of Command
 - - - - - Line of Supervision
 Line of Tehcnical Assistance
 - . - . - Line of Coordination

3. Continuing Education

Indonesia is firmly committed to the principle of lifelong education. Since independence, in 1945, it has been an important policy priority to provide opportunities for continuing education through various training courses of short duration. Such courses were offered to post literacy, elementary school, secondary school, and tertiary education graduates as well as drop-outs from the school programmes. More than 200 types of courses are offered by more than 19,000 private institutions under the overall supervision of the Directorate of Community Education of the Directorate General of Out-of-School Education, Youth and Sport. Training is offered in areas such as typing, sewing, hairdressing, accounting, flower arrangement, electronics, computer programming, and languages, especially, English, German, French and Japanese.

Indonesian progress in development over the past decades has led to rapid changes in the structure of the job market and consequently in skills requirements of the labor force. In this situation, continuing education becomes particularly important as school education cannot always prepare graduates appropriately for entering the job market. Not only drop-outs, but also graduates from primary, secondary and even tertiary education, therefore, benefit enormously from the training courses provided by the continuing education programme. Recent years have seen a surge in the popularity of this programme and growth has been rapid, especially in the large cities of Jakarta, Bandung, Medan, and Ujung Pandang. The Ministry of Education and Culture and the Ministry of Manpower co-operate in providing supervision, standardization and evaluation of the programme. Quality control and national examination criteria for each type of training offered are among the management functions, in which the Directorate of Community Education is assisted by advisory groups composed of specialized experts from the fields of education, professional associations, and private enterprise.

An additional category of continuing education provided by the Directorate of Community Education is the post-literate income-generating programme, which has been on-going for almost two decades and which will be upgraded in the next five-year development plan as an important contribution to the national poverty alleviation effort.

A final category is made up of the equivalency programmes for primary and junior secondary education. The *Paket A* literacy learning programme has long provided elementary school equivalency examination opportunities. However, recently a special equivalency Paket A programme was developed to cater for the 7 to 12 year age group, who dropped out of primary schools or who, for one reason or another, can not attend primary schools. In the context of extending compulsory basic education to 9 years, *Paket B* was recently designed to provide equivalent out-of-school education to those youngsters who for one reason or another can not attend formal Junior High School.

In summary, Indonesia presently operates five categories of continuing education, i.e.:

- (1) programmes improving quality of life,
- (2) programmes promoting individual interests,
- (3) future-oriented programmes,
- (4) post-literacy, income generating programmes, and
- (5) equivalency programmes.

In accordance with the Education Law of 1989, continuing education is an integral part of the Indonesian system, which needs to constantly develop and adjust to the changing requirements of Indonesia's overall development and the labor market.

4. Early Childhood Development

Another major Education for All area is that of Early Childhood Development. The Government realized early on that the universal provision of pre-school facilities in the form of institutions such as kindergartens simply was not feasible in a country the size of Indonesia. While the Ministry of Education and Culture is planning a dramatic increase in pre-school facilities, full access for all remains a goal beyond this decade. A different and innovative strategy was therefore designed: one that would empower poor mothers and communities with knowledge and skills allowing them to interact with and provide mental stimulation for the very young child, i.e. the 0-3 year-old. Coordinated by the Office of the State Minister for the Role of Women with the National Family Planning Co-ordination Board (BKKBN) as operational agency and implemented by NGOs and women's organizations, the programme became known as *Bina Keluarga Balita* (BKB), enhancing the role of women in comprehensive child development. Close to 1.3 million mothers in some 18,500 villages have been trained in the programme.

In summary, the Indonesian approach to early childhood development is unique in a number of ways. Firstly, it focuses on the 0-3 year rather than the 3-6 year old children. Secondly, it aims at educating mothers and communities in early child stimulation thus avoiding expensive solutions such as institutions. Thirdly, it is implemented entirely through NGOs and women's groups and thus is very much seen as "belonging" to the community. Fourthly, it has successfully combined parental monitoring of physical and mental growth via the introduction of unique child growth and development based on milestones in Indonesian child development. And fifthly, in 1991, President Soeharto elevated the BKB programme to a "National Movement" thus giving it the highest status and importance possible in Indonesia.

In 1998, after finishing a comprehensive study on the status of Early Child Development (ECD), Indonesia is going to develop further ECD programmes to cover children from 0-6 years of age to make them more ready for elementary school education. However, we do realize that until the year 2003 the first priority will still be on the universalization of 9 years basic education. For this, community participation in support this programme will still be every important.

5. Community Participation, Empowerment and Sustainable Development

From the previous four sections I have briefly informed how Indonesia conducted programmes on education for all with limited budgets but with determined targets. It is clear that without the leadership of the President who moves people in the government as well as in the communities, we could not imagine that Indonesia would achieve the present stage of development: 95 per cent net enrolment rate of people of 10 years of age.

Community Participation

When we talk about community participation, we mean the participation of all people from all layers of society and walks of life: the elites, the rich, business people, media people, as well as people who still do not realize the importance of education.

It is apparent that without community support especially with regard to the provisions of educational facilities, finance and manpower, it is unimaginable that basic literacy campaign in Indonesia could achieve their present progress. On the other hand it is also recognized that without the support of electronical as well printed media that motivate illiterate people to participation in learning groups, it is impossible for Indonesia to arrive at the present achievement. All community participation from the upper level of governmental officials and upper strata of the society up to the grass-root level of people in the community can only come about with the commitment of the President to implement the constitutional obligation to give all people the right to education.

Empowerment and Sustainable Development.

It is understood that education is a strategic vehicle to empower people to be more capable in developing themselves to participate in community development and to improve their quality of life.

However, in a era of globalization where the economic life of every nation is controlled by international trade and global politics, being literate at the basic level and only getting to elementary education level will be felt as meaningless for the participant to improve their quality of life. To make education really meaningful to empower them it is important to raise the program of basic literacy to functional literacy and to upgrade primary education to high school education level as the basic universal education. Thus, only with a qualified programme of functional literacy, a qualified programme of 9 years basic education, and relevant continuing education programmes for adults can a education for all programme support sustainable development in developing countries.

DECENTRALIZED PLANNING AND MANAGEMENT OF LITERACY AND BASIC EDUCATION PROGRAMMES*

R.Govinda

Introduction

Decentralization of educational planning and management has come to occupy the centre stage of all official discourses on education policy making, at least for the past one decade. This is true not only of the developing countries but also of the developed ones. Yet there seems to be no consensus on what 'decentralization' connotes. For some, decentralization implies weakening of 'state control' and empowering the communities to more actively participate in educational decision making. Some of the proponents of this approach define privatization as a legitimate manifestation of the process of decentralization. For some others, it is much more a matter of organizational reform involving dispersal of powers and authorities, hitherto held by the central ministry, to peripheral units of administration. Decentralization has also been given the shape of a bipolar set up with the state at one end and the school at the other, with practically no role for the middle level education administrators.

It is obvious that the perspective of decentralization adopted in any country is greatly influenced by the conditions prevalent therein, not only in the education sector but also in terms of the overall political dynamics in the sphere of social policy making. This is clearly evident from the reform processes adopted in different countries. While national policy makers are the major players in articulating the specific form of decentralization to be adopted in the country, international agencies have also been influencing the move towards decentralization in developing countries. This is particularly true of the basic education field which has become a priority sector in almost all the countries following the Jomtien Declaration on Education for All. Whatever be the connotation adopted by a country, a generally accepted view of educational decentralization is that it signifies "a wider representation of legitimate interests" in the public school system. (McLean and Lauglo, 1985) Whether the contestation is in the political sphere or it is confined only to the education bureaucracy, the critical question is one of sharing powers and authorities for decision making.

With diverse connotations attached, decentralization poses a number of critical questions such as : what is the rationale put forth by different countries for decentralization ? what are the processes initiated for creating a decentralized system of educational planning and management ? what functions and powers have actually been decentralized ? what are the problems involved and what lessons have emerged from the experience of decentralizing in different countries. This brief paper attempts to address

* To be presented at the Third UNESCO-ACEID International Conference on Educational Innovations and Sustainable Development, Bangkok, 1-4 December 1997

some of these questions concerning decentralization of educational planning and management with particular focus on literacy and basic education. They are discussed mainly from the education context characterizing developing countries, even though occasional references are made to current developments in the industrialized nations.

II. Changing rationale

In a way, the particular rationale put forth by a country for moving towards a policy of decentralization is already implicit in the definition and process adopted for decentralization. In fact, central control versus regional autonomy problematic is not new to the field of public administration. At different points of time, policy-makers in almost all countries have dealt with the questions of balancing central control by national governments with appropriate levels of relative autonomy to local or sub-national units for self-management. (Govinda, 1997) Generally, restructuring of educational management framework has followed similar, and often more pervasive, moves in the public administration sphere, particularly dealing with delivery of social services. Proclamations for decentralisation came up in the decolonised countries, during the post-war period, mainly as part of the liberation rhetoric, as part of the process of giving 'power to the people of the land'. Thus, to begin with, decentralisation proposals were driven by ideological concerns of empowering the communities at the local level for self-determination in spheres of direct social concern. But the new wave of enthusiasm found for decentralization seem to be almost entirely driven by concerns of efficiency. As Caldwell (1990) points out, the current move towards decentralization seems to have been prompted by 'the perceived complexity of managing the modern education system from a single centre and the government's acceptance of decentralization as a pragmatic means of improving the efficiency of the system.' Even in the developing countries, a predominant view is emerging that centralised state control is responsible for the poor state of affairs and it is essential to bring in decentralisation and local community participation for redeeming the situation. This view is often promoted at least implicitly by the conditionalities placed by international agencies involved in educational development. Reviewing the current literature on this issue, Maclure (1993) writes that the general approach has been underscored by three arguments : (a) since central governments are increasingly unable to direct and administer all aspects of mass education, decentralization of planning and programming will result in improved service delivery by enabling local authorities to perform tasks they are better equipped to manage; (b) since mass education has placed an inordinate strain on state resources, decentralization will improve economies of scale and will lead to more appropriate responsiveness to the particular needs and situations of different regions and groups; and (c) by engaging active involvement of community and private sector groups in local schooling, decentralization will generate more representativeness and equity in educational decision making, and thus foster greater local commitment to public education.

It should, of course, be noted that arguments of efficiency are not free from ideological considerations. As Lauglo(1990) points out, "Notions of efficiency requirements are in fact heavily conditioned by established patterns of legitimacy : who

should have the *right* to decide? Federal states often lack even basic central direction to ensure equivalence of credentials. In Switzerland, Germany and the USA, it is the member states that certify teachers; the nation state does not have the authority to require equivalence." Proponents of this line of argument would consider even community empowerment in an efficiency framework, the assumption being that "communities" will prove to be homogeneous in culture and values, or at least be better able to deal with conflicting interests, than larger scale political institutions. A related assumption is that reducing the scope and complexity of the political environment in which schools must operate will reduce the complexity of the demands placed upon them. (Plank and Boyd, 1994) It is not that every one is happy with this trend. For instance, Slater (1989) opines that, under the guise of efficiency, there is an attempt to hegemonize a certain reading of decentralization, to deploy it as watchword, to utilize it in the creation of consent around privatization and deregulation. Whether one agrees with Slater's reading of the situation or not, it is not possible to completely delink decentralisation from political and ideological under currents.

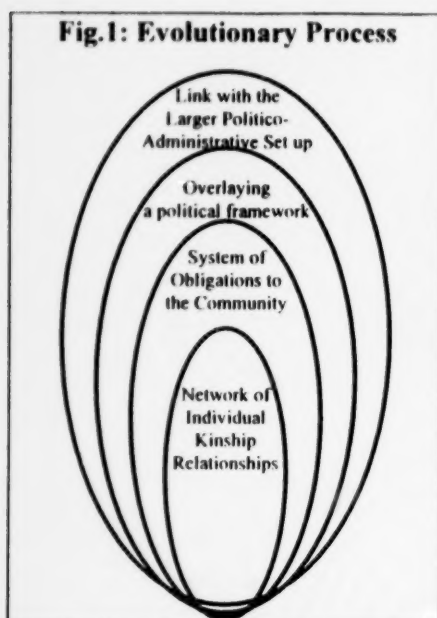
III. Process of Creating a Decentralized System

As was mentioned earlier, central control or local self-governance is never an all or none phenomenon. It is essentially a matter of coming to terms with sharing of powers and authorities between stakeholders at various levels. In the normal course, within a stable political set up, even though the equations keep changing, all stake holders come to accept a set of norms over a fairly long period of time. Thus decentralization, even if contested, is not seen as seriously threatening to the established power centres. In a way, this is what one finds in politically stable countries of the world, where the nation-state has evolved over a relatively long period of time through historical coming together of local power centres, more or less voluntarily. (fig.1)

In the developing countries, particularly those which became independent nation-states through a decolonisation process, the story of relationship between stakeholders at the local level and at the nation-central level has been configured externally; rather, it is still being configured. Decentralization moves in these conditions are basically transformational and not evolutionary. The state being in a commanding position, in a way, has chosen to engineer change by redefining the role-relationships between the centre and the periphery. Why should the centre choose to devolve powers and authorities to lower level or peripheral contenders ? Answer to this differs widely and has to be largely found in the current state of the education system, on the one hand and the political and financial constraints on the other.

It has to be recognized, as Laclau (1985) points out, it is worthwhile remembering that many of the developing countries have assumed their present form of a nation-state through a process of decolonisation, following an external logic, rather than acting in response to the internal growth of centres of hegemonic power. Therefore, for these states,

Fig.1: Evolutionary Process

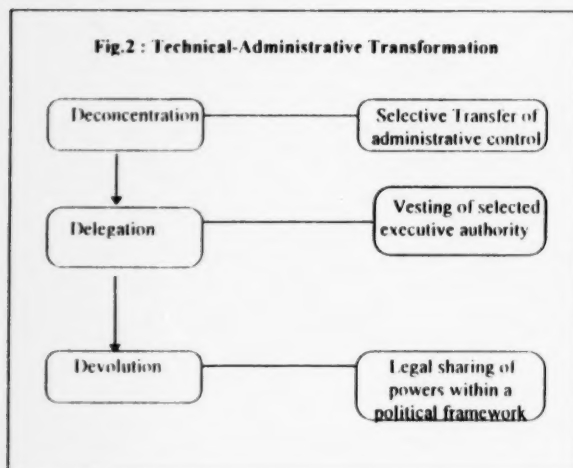


transforming the existing set up to achieve a balance of powers between the centre and the periphery, and reaching a state of relative stability is a continuous process of search. It is not unusual to find countries going back and forth in their policy prescriptions in order to find the right balance. What is the capacity of the state/centre to reform its own relationship and engineer the transformation process is not easy to answer. Perhaps, it is quite limited, particularly if the operational space is occupied by several funding agencies at the national level and the political space at the local level is occupied by traditional elements with vested interest to maintain the status quo.

One finds two distinct approaches even within this transformational framework for

bringing in a system of decentralized management for literacy and basic education programmes : (a) technical-administrative transformation, and (b) social-political transformation. In both the approaches the transformation process is to be engineered by the state itself.

Fig.2: Technical-Administrative Transformation

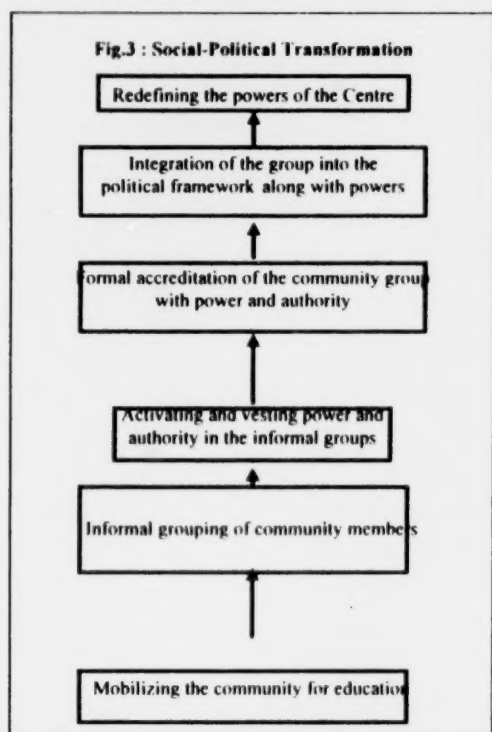


The former (Fig.2) approach is influenced by the fact that the internal logic of the bureaucratic development of the state has been a powerful factor of centralization. And, therefore, the transformation process begins by treating the task essentially as a top-down technical exercise to be carried out within the ambit of administrative reforms. Sri Lanka, in a way, presents an example of this approach adopted systematically which began the process of decentralization more than

three decades ago and consistently followed up with necessary administrative reforms. Currently, there is a debate on the process of devolution of powers and authorities, hitherto delegated to local level bureaucrats, to political bodies elected at the *Pradeshiya Sabhas*. This approach gives a sense of control for the central leadership over the pace and extent of decentralization. Traditional literature views the three steps indicated here as three different connotations of decentralization. It should, however, be noted that in the long term, stable power relationships have to be defined in legal-political terms. This does not mean that the sequence is unchangeable or that new waves of deconcentration or

delegation cannot be initiated from the centre. In fact, this is what is happening in some of the industrialized countries as illustrated by the deconcentration measures in France or the formation of a bi-polar framework between the centre and the school under the banner of school based management in Britain, New Zealand and Australia.

An alternative model for creating a decentralized management framework is to begin from the other end, adopting a bottom-up approach. Here, even though, the actions are carried out under the patronage of the central leadership and through the intervention of an external agent, primacy is given to the local community (i.e., civil society) in formulating the rules of the game. The approach, in a way, tries to orchestrate the evolutionary process through building from below an organizational arrangement



that will eventually get integrated with the national framework. In the technical-administrative approach, the main scene of action is the centre and activity mainly consist of rewriting the books of rules, regulation and functional allocations. At best, this may involve consultation with the actors at the peripheral levels. In contrast, a bottom-up approach shifts the scene of action to the villages and remote corners of the country. The basic purpose of adopting a bottom-up approach is the creation of endogenous factors of change that contribute towards increased equity and generate developmental dynamics at the grassroots level. As Marsh points out, "bottom-up in the state-initiated reform context focuses on school and teachers as the bottom ... important dimensions of the bottom-up strategy found in the dissemination literature : power equalization among decision makers at the

bottom and an emphasis on a set of process steps featuring needs assessment, setting of site-relevant objectives, searching for solutions, and implementing those solutions. The role of the state is primarily one of funding and defining the parameters of the local problem-solving effort." It is difficult to come across efforts at national level which are exactly on these lines in any country, even though small scale efforts and sectoral plans as in case of literacy campaigns hold good example for generating such grassroots level dynamics. The problem with many of these efforts is that they are abandoned before they culminate, without incorporating the organizational arrangements into the formal-legal framework. They are generally treated as good innovations that cannot be taken to scale. Perhaps, Lok Jumbish, a programme for universalizing basic education in Rajasthan State of India is an interesting case which, operating on a fairly large scale, attempts to

orchestrate such a model in a consistent manner going through the whole process of transformation from below.

It has to be recognized that any of these processes of transformation will have to be initiated within an already operating system with its own flexibilities and rigidities. Also, we cannot insulate these processes in the sphere of basic education from the development in other social sectors. Also, elements of these two models may be operationalised in an overlapping manner. For instance, while advocating for people's mobilization at the grassroots level, the government may find it politically expedient to simultaneously initiate actions for deconcentration or delegation. In this process, some actions may complement one another and promote progress towards decentralisation. But some others may remain asynchronous and create more friction points in the system internally. For instance, creating formal bodies, within a larger political framework or otherwise, at the periphery without adequate preparation among the stake-holders for self-determination may prove counterproductive. In fact, there are ample examples where governments have put forth lack of capacity and preparedness as an excuse and moved to recentralize power.

IV. Decentralized Management in Action : Some Critical Issues

Many observers complain that rhetoric and exhortations for decentralization have been on an unprecedented scale in the recent past, but actions on the ground have remained far behind. This may be true if one looks at the way in which national ministries of education in developing countries continue to work. However, one also comes across a wide range of small scale initiatives going on in almost all the countries which represent moves towards decentralization. Also, one can find policy formulations emerging in many developing countries that promise moving towards a more decentralized system of management particularly with respect to basic education programmes. It should be recognized that the path is not an easy one. Changing the well entrenched system of control is obvious to disturb many established rules of the game and raises many issues which need to be carefully tackled.

Transition from Project Mode to Programme Mode

Literacy and basic education programme is by and large a state enterprise in all the countries. Therefore, it is natural that attention is focused mainly on the initiatives made for system-wide reforms. However, it is significant to note that efforts for decentralization and community participation are often carried out under projects which are smaller in coverage and spread. Often, such projects attempt to put in place a new framework for management of literacy and basic education at a sub-national functioning with considerable autonomy and with the objective of involving the community in an active manner.

The critical question is, "Can such Project based efforts be considered as harbingers of system-wide reforms bringing in an era of decentralized educational management? or will they remain mere show pieces of small scale successes?" A frictionless smooth

transition from the project mode to the programme mode cannot always be assumed. At least two points have to be carefully examined : (a) A smooth transition from project to programme mode depends on the way the concerned policies, rules and regulations are re-oriented to accommodate the new initiatives. For instance, a common tension that arises in this regard is with respect to project personnel and their integration into the system. How do we overcome this problem of dual sets of rules and regulations and ensure smooth integration of the project with the regular programme? (Govinda and Varghese, 1994) (b) Further, as long as we are operating within the framework of a project, it is not likely to be questioned by the stake holders in the larger system. However, many components of such projects may become a bone of contention when they move to the main stream. How do we minimise such frictions and human tensions within the management hierarchy? Can the integration process withstand the opposition from within the system posed by the long entrenched vested interests supporting the maintenance of the status quo? Transition from one system mode to another is bound to entail some amount of tension and conflict. But if these conflicts persist they may prove detrimental to the smooth functioning of the system and the new system may never take root. How do we avoid such a situation?

How is a liberal democratic set up related to decentralized management?

Often, literature on decentralization assumes that genuine decentralization will lead, at least in the long run, to a democratically elected local self-governance system. Is a 'liberal democratic' political set up at the national level and/or at the grassroots level, essential for adopting devolution policies in the education sector ? This is a difficult question. In reality, there are examples with a centralised socialist pattern of government, devolving significant authority for decision making to local units, along with powers for financial mobilisation and control. Reforms introduced in China during the last decade could be considered under this category. Yet we should differentiate between such a situation which may be called *pragmatic devolution* of selected powers and authorities from the qualitatively different form of a *democratic devolution* process operating in a democratic set up supported by ideological conviction. In the latter case, the role of the elected people's representatives becomes fundamental while in the former this may not be such a critical element.

Decision making power and Decentralization

As already mentioned, 'decentralisation' has come to acquire multiple connotations bringing under the rubric sometimes very contrasting situations in terms of power equations between the centre and the periphery. Even when this issue is settled, the important question to be tackled is '*who in the decentralised level will exercise the powers and authorities vested?*' For instance, not all kinds of decentralisation would lead to increased participation by the people, if that is one of the considerations for decentralising the management framework. As Webster (1992) observes, decentralisation need not always result in the empowerment of the people and reduction in state control. Certain kinds of decentralization may only involve further strengthening of the State control through what some scholars describe as 'vertical governmentalisation'.

A related question is that of achieving synchrony between political reform and educational management system. Transiting from a centralized system to a decentralized one seem to involve two tension spots. The first is where there is a process of delegation of powers to lower level authorities from the central level. This may create tension among teachers and other field functionaries who may feel threatened due to the proximity of the controlling authority. At the same time, delegation of powers to lower level obviously involves dis-empowerment at the central level. This may be resisted and there may be instances where the authority to act may never be fully transferred to the decentralized units. The second kind of tension spot is related to transition from bureaucratic control to empowerment of community representatives. As Maclure (1993) points out based on a study of school reforms in Burkina Faso, "Public schools, even in the most remote communities, remain a part of a large state bureaucracy which ... militates against the transformation of schooling as a genuine community enterprise. ... state bureaucracies tend to be hierarchically structured and function according to precepts of formalization and routine. The typical structure and *modus operandi* of state bureaucracy is antithetical to major change and community level "lay" input into the management of routine public sector tasks." This kind of tension arising out of the immutability of the bureaucratic control mechanisms can be quite debilitating. Empirical studies (Govinda, 1997) refer to many instances where the delegation of power has remained only on paper as the decentralized units have never been allowed to use them. The critical question is, "How do we build an atmosphere of mutual trust and confidence between the bureaucracy and grassroots level bodies entrusted with educational development activities?"

Reducing the role of bureaucracy in the decentralized set up - How far can we go ?

Even if one does not fully endorse Maclure's (1993) view of bureaucracy as renegade and antithetical to empowerment of people, one cannot deny the inertia that a well entrenched bureaucracy is likely to offer for change processes. And, one finds that the existing institutional arrangement for management of basic education in all the countries is highly bureaucratic and hierarchical. Bureaucratic inertia for accepting change manifests itself in a variety of ways in almost all the countries. Within this bureaucratic framework, the existing structures have their legitimacy not so much in terms of the activities performed but in terms of what is specified in the books and job charts. How do we dismantle this vestige of the colonial period and create a new culture of communication where more transparent procedures are set and validated by action rather than through specifications in the job chart ? This is essential for initiating decentralized management practices.

Many are apprehensive that decentralization may result in the creation of more bureaucratic levels through formal organizational structures at the grassroots level. This is a complex issue to deal with. In fact, in many developing countries, past government actions have led to tremendous concentration of power in the hands of the bureaucracy. With massive expansion of the literacy and basic education programme the bureaucracy has also grown in size. In fact, the deconcentration measures implemented from time to time in all the countries have resulted in the spread of administrative structures deep down into the

education network. And, as Rizvi puts it, "Bureaucratic rationality, by appearing to be neutral and objective, concerned only with the question of means and not of ends, has the consequence of making subordinates submit their will and surrender their power to their administrative superiors." This raises the question, "How do we institutionalise decentralization without further strengthening of the bureaucratic machinery?"

Yet, there is also a counter argument that cannot be brushed aside. In political systems with empowered local self-government bodies, political upheavals at the national and provincial/state levels have their echo at the grassroots level. In such circumstances, devolution of power to elected representatives can threaten stability in the organizational arrangements in the field and thereby strengthen the hands of the bureaucracy instead of giving more power to the community. Under these conditions, one has to carefully decide at each decentralized unit a proper mix of community involvement and bureaucratic control. The central question to tackle is, "*how much of bureaucracy is desirable and functional at different decentralized units?*"

Creating the institutional framework for implementing decentralization

Implementation of decentralisation measures require new organizational arrangements and institutional support systems for capacity building as well as monitoring. Several old structures are getting revitalised and new ones are being created at all levels of educational management. The school management committees, parent teacher associations, school cluster committees, village education committees, and various other bodies being created at the district, block, thana, and so on represent this phenomenon. This has also raised the need for fundamental changes in the roles and relationships among different stake holders in the field. How do we ensure this process of role transformation? The answer in all the countries is that it has totally been an endeavour sponsored from above by the State itself. The critical issue is whether such State promoted efforts to institutionalise grass-roots level processes of management will work? Can we engineer transformation of social systems from above? And, even if we enforce these measures through centrally designed programmes will they survive and take roots?

It should also be appreciated that the new arrangements are being created not in a vacuum but in the context of a well established system. It is not just an installation of a new framework. How do we integrate the new institutional structures with the earlier ones without seriously destabilising the system? Is it possible to consciously create radical forces within the existing system that are potent enough to dislodge the old or possibly subsume the old in the new organisational framework? This is not just a technical matter as often accrediting new structures with appropriate roles and functions in place of the old ones require rewriting official Acts and legal framework. It is not unusual to find that new institutions come up under projects in a parallel manner and even disappear when the project funds dry up. This is an important issue from the point of view of sustainability of the decentralized mechanisms when created within a project framework.

Building Professional Capacities at Local Level for Decentralized Management

As has been noted earlier, there is no dearth of policy statements for decentralization. But, implementation of the policy remains weak. A major excuse given for tardy implementation is the absence of professional capacity at the local levels for effectively transacting planning and management functions. While one has to accept the need for building professional capacities at the local level it is dangerous if This (lack of capacity) becomes a useful ploy for the central authorities to take over all decision-making, even those legitimately to be done at the lower levels. Accepting such excuses tends to legitimate further strengthening of central control while keeping the rhetoric of decentralization going on. There is a need to change our mind-set of viewing knowledge and capacity in a hierarchical manner as though capacities at the central level necessarily have to be superior to those at the sub-national levels. Also, it has to be accepted that much of learning and capacity development takes place through actual functioning at the local level by the stakeholders themselves.

V. Lessons from Decentralization Efforts

As noted earlier, coming to terms with power sharing which is the core of decentralization can never be considered as complete. New political formation within the country as well as new socio-economic realities and developments at the global level will continue to influence the process. Every country has to find its own path and strategy for operationising its policy on central control and local empowerment. There is no one model of decentralization applicable to all countries. Yet, study of the experience from different developing countries do hold certain lessons.

First, structural reforms have to be accompanied by appropriate role redefinition of the various stakeholders on the one hand and rewriting the legal framework appropriately on the other. Secondly, empowerment of people at the local level for self-determination and incorporation of this into the existing political framework has to be the final goal of decentralization, whatever the path taken to achieve that end. Without this decentralization initiatives are likely to remain only on paper or disappear with the completion of short term projects with which they are associated. Third important lesson is that it takes time to reap the benefit of decentralization if efficiency and effectiveness of the basic education system is our goal. This is because, decentralization, in effect, tries to achieve basic transformation in the professional and social role relationship among various stakeholders. Role of international funding agencies in this regard requires reexamination as often they fund short term time bound projects and look for quick impact. Fourthly, privatization of education in the developing countries cannot be equated with decentralization. This has to be viewed in the context of the extent of universal provision of basic education achieved in the country. In countries where provision of basic education itself is yet to be universalized, privatization may lead to further inequity. Fifthly, organization variables influence the outcomes of decentralization efforts. They include the clarity and simplicity of the structures and procedures used to decentralize, the ability of the implementing agency staff to interact with higher level authorities, and the degree to which components of decentralized programmes are integrated.

(Rondinelli, D.A., Nellis, J.R. and Cheema, G.S., 1984). Lastly, summarizing the lessons derived from an analysis of major project on decentralization implemented in Latin American and Caribbean countries, McMeekin (1993) identifies seven important points : (a) Have clear objectives and a coherent plan; (b) Assure support for decentralization at the top level; (c) Consider what functions are best performed at which levels; (d) Be aware of sensitive political and institutional factors; (e) Recognize the importance of financing; (f) Recognize the challenges in implementing major changes; and (g) Be prepared for decentralization to take a long time.

VI. Conclusion

In conclusion we may state that decentralization is not a "quick fix" for the administrative, political, or economic problems of developing countries. (Rondinelli et. al., 1984) Effective decentralization which envisages basic transformation in the organizational framework and genuine empowerment of the people at the grassroots level demands the emergence of a new 'world view' on what constitutes educational management. Merely dismantling the bureaucratic system and passing resolutions in the national parliament may not suffice. Decentralization presupposes transparency in transactions at all levels. It involves, therefore, the creation of a new management culture - a culture built on faith and freedom not on suspicion and control.

It should be stated that centralisation-decentralization question in educational management cannot be resolved by opting for one and rejecting the other. Both forms of management perspective are bound to remain with us and it does not help to classify systems in a dichotomous framework. What is more important is the development of a new culture to work together at all levels, based on the principles of collaboration and partnership in place of control and coercion. Also, it is counter productive to labour on the absence of management capacities at the grassroots level. Capacity building and introduction of decentralization can go hand in hand. Neither of the two has to wait for the other.

References

- Govinda, R. (1997) *Decentralization of educational management : Experiences from South Asia*, UNESCO- International Institute for Educational Planning, Paris.
- Govinda, R. and Varghese, N.V. (1994) Linking District Plan Implementation with Improvement in School Functioning. Paper presented at the NIEPA-IIEP Workshop on District Level Plan Implementation Strategy with Particular Reference to School Improvement, 16-20 August 1994, New Delhi, India.
- Laclau, E. (1985) "the Hegemonic Form of the Political : A thesis", in Abel.C. and Lewis,C.M. (eds.) *Latin America, Economic Imperialism and the State : the Political Economy of the External Connection from Independence to the Present*, Athlone Press, London, pp. 70-91.

Maclure, R. (1993) "School Reform in Burkina Faso : The Limited Prospects of Decentralization and Local Participation" *Canadian and International Education*, vol. 22, no. 2. p.72

Marsh, D.D. and Bowman, G.A. (1989) "State-Initiated Top-Down versus Bottom-Up Reform" *Educational Policy*. vol.3, no.3, p.197

McMeekin, R.W. (1993) "Decentralization of Education" The Major Project of Education in Latin America and the Caribbean, Bulletin 31, Chile. pp. 62-66.

Plank, D.N. and Boyd, W.L. (1994) "Politics and Governance of Education". In Husen, T. And Potlethwaite, T.N. *International Encyclopedia of Education*, Pergamon, New York. p. 4591

Rizvi,F. (1986) *Administrative Leadership and the Democratic Community as a Social Ideal*, Deaken University Press, Victoria, 1986.

Rondinelli,D.A., Nellis, J.R. and Cheema, G.S. (1984) *Decentralization in Developing Countries : A Review of Recent Experience*, The World Bank, Washington D.C. p.58

Webster, N. Panchayati Raj in West Bengal : Popular Participation for the People or the Party? *Development and Change*. Vol.23, No.4,1992. pp.129-163.

R.Govinda is currently working as a Professor of Education and Head of the School and Non-formal Education Unit at National Institute of Educational Planning, New Delhi, India. He was earlier on the Faculty of the International Institute of Educational Planning, Paris. He has worked extensively in the area of literacy and primary education in India as well as at the international level. His recent publications include a book on *Decentralization of Educational Management : Experiences from South Asia* and a research study on *Quality of Primary Education in India*.

CHAPTER SIX

THEMATIC RESOURCE PAPERS ON KEY ISSUES AND CONCERNS

Kazi Rafiqul Alam, Dhaka Ahsania Mission

Shakuntala Bapat, Indian Institute of Education

Zhang Tiedao, Gansu Institute for Education

Minda C. Sutaria, SEAMEO INNOTECH

Supote Prasertsri, UNESCO Phnom Penh

EDUCATIONAL INNOVATION FOR SUSTAINABLE DEVELOPMENT: TRAINING OF LITERACY AND CONTINUING EDUCATION PERSONNEL

Kazi Rafiqul Alam

1. Background

For the last few years the world is progressing very fast which put challenges to education especially schooling society. The world has now become like a borderless society due to unprecedented development in communication technology through the electronic media. As such, the world has now been transformed into an informed society which is directly contributed to by the information super highway which in turn has created information by-ways and side-ways.

Present day development has created a polarisation where the rich are getting richer and the poor are becoming poorer. Now the question arises: how to define community, is it by common interest or by common goal or by common objective as opposed to common boundary? Here again the question comes up about definition of work place. Because nobody knows where he/she will be working, in which sector he/she will be working or in which country he/she will be serving. People are also thinking about simultaneous careers. Hence, the question may come up whether education is a social responsibility or an international responsibility. In any case, we have to redefine the education system. There needs not be any monopoly of knowledge within the boundary of educational institutions. The availability of education may somewhat be compared with a shopping mall where people can choose and market which they like depending on the quality, cost, etc. Similarly the society is looking for quality education which satisfies their needs through a cafeteria curriculum. Hence, the challenges to schooling society need to be addressed through appropriate education innovations which will result in sustainable development. Here the question of learning is also to be redefined. The role of government, society, educational institutions require to be closely examined and redefined.

2. Educational Innovations for Sustainable Development

In the context of what have been said above, we will now examine the educational innovations that have been made possible during the last few years under the sponsorship of UNESCO-PROAP, Bangkok through its Asia-Pacific Programme for Education for All (APPEAL). The UNESCO-PROAP, Bangkok initiated a series of activities to undertake capacity building of personnel who are involved in literacy and continuing education at the regional, national and grass-root levels to achieve sustainable human development in the Asia-Pacific region. APPEAL was initiated by UNESCO in 1985 with the objectives as follows:

- i. Universalisation of primary education;
- ii. Eradication of illiteracy; and
- iii. Continuing Education for Development.

In this paper I will limit my discussion to two major aspects of APPEAL i.e. (i) Continuing Education for Development (CED) and (ii) Eradication of illiteracy.

2.1 APPEAL and the Promotion of Continuing Education for Development (CED)

As a community becomes fully literate, the question arises: "literate for what?" The answer, of course is that adults can continue to learn on their own throughout life. There must be an opportunity for learning to continue and the means for people to fulfill this opportunity. Continuing education provides the means whereby people can develop to their maximum potential and ensure improved well-being and a high quality of life for all.

There are two prerequisites for effective lifelong learning. The first is that adults need to be literate and that literacy skills must be at a sufficiently high level to permit autonomous learning. The second prerequisite is that there has to be a rich educational environment with a wide and diverse range of opportunities for individuals to undertake the various learning projects needed throughout adult life. In other words, there should be as many agencies and facilities as possible providing programmes and resources to enable all literate citizens to choose the area and mode of learning. All literate adults should have immediate and effective access to these programmes and resources.

2.1.1 Under APPEAL, continuing education is defined as follows:

Continuing education is a broad concept which includes all of the learning opportunities all people want or need outside of basic literacy education and primary education.

This definition implies the following:

- i. Continuing education is for anyone, but particularly for literate youth and adults.
- ii. It is responsive to people's needs and wants.
- iii. It can include experiences provided by formal and non-formal education and through informal learning.
- iv. It is defined in terms of "opportunity" to engage in lifelong learning after the conclusion of primary schooling or its equivalent.

The relationship between lifelong learning and continuing education can be shown by a simple diagram (Figure 1). In this diagram the central column shows how an individual can plan and schedule educational programmes throughout life. These programmes may be formal, non-formal or informal in nature.

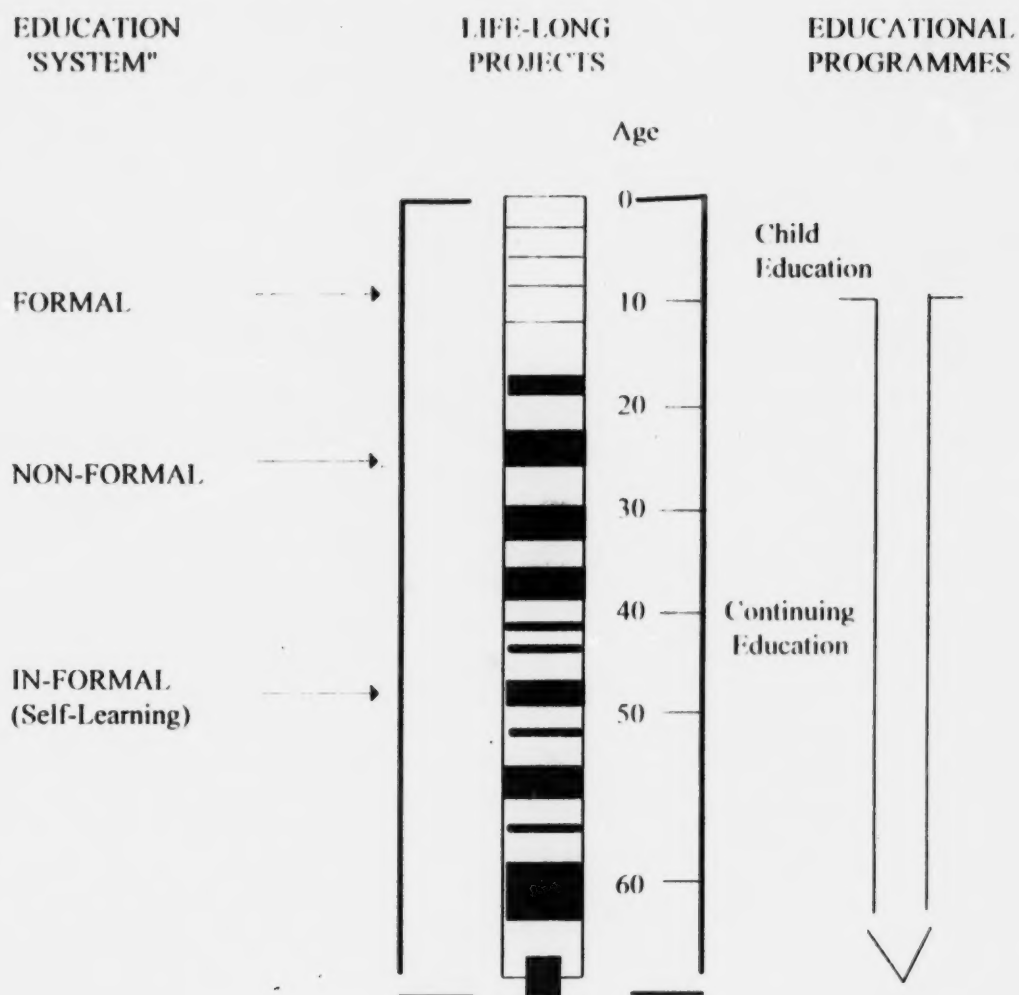


Figure 1. The relationship between lifelong learning and continuing education
(The bands represent individual learning projects)
(Source : ATL-P-CE, Volume 1, Page 7)

2.1.2 UNESCO identified the weaknesses in the provision of continuing education in some Member States surveyed during 1989-91.

1. Weaknesses in policy

- 1.1 An inadequate understanding of the concept of continuing education as an opportunity to engage in lifelong learning;
- 1.2 Inadequate appreciation of the role of continuing education in personal and socio-economic development;
- 1.3 Lack of holistic policies to ensure continued access to formal and non-formal education and informal learning throughout the lifetime of all adults.

2. Weaknesses in scope and coverage

- 2.1 Narrow focus for continuing education with some countries specialising in post-literacy and equivalency programmes at the expense of other types;
- 2.2 General lack of awareness of the types of programmes which could be and perhaps should be made available;
- 2.3 Limited access to continuing education so that only small proportions of the adult population could participate.

3. Weaknesses in resources

- 3.1 Shortage of trained personnel to provide effective continuing education.
- 3.2 Limited budgetary provision in most Member States;

Many countries in Asia and the Pacific have often viewed their education policies from the perspective of formal education alone and have therefore not formulated any overall policy on continuing education. Those countries which do have emerging continuing education programmes, or even those with well-established systems, have areas in need of improvement.

2.1.3 The APPEAL response

Education enables people to analyse and synthesize information in a systematic way to use wisely. Nobody can claim that what we learn in school and college will be sufficient throughout life. The situation changes all the time, compelling people to respond to new challenges - hence the need for lifelong learning. The role of literacy and continuing education is to help people acquire knowledge according to their needs and to

help them arrange and use information systematically in order to improve their quality of life.

Education is viewed as a single system consisting of formal and non-formal education sub-systems and involving informal learning. This holistic view of education supports the concept of the learning continuum that encourages lifelong learning. No stage of learning should be viewed as final. The goal of the learning continuum is not merely the achievement of literacy, but to promote the ideal of lifelong learning itself.

APPEAL, therefore, worked very closely with the Member States and facilitated improvement in formulation of policy, planning, management and systematic development of continuing education. An aim has been to help each country develop its human resources in the broadest sense as defined by the 1991 Human Development Report of UNDP.

"Human development is defined as the process of enlarging the range of people's choices - increasing their opportunities for education, health care, income, and employment, and covering the full range of human choices from a sound physical environment to economic and political freedoms."

However, some countries have not yet fully appreciated the fact that human resource development and lifelong learning have the same goals. What is urgently needed now is a broader view of education, not one that has formal schooling as the only component of life long learning. Since it provides the opportunity to engage in lifelong learning, continuing education must now emerge as the main component of this broader view of education (Figure 2).

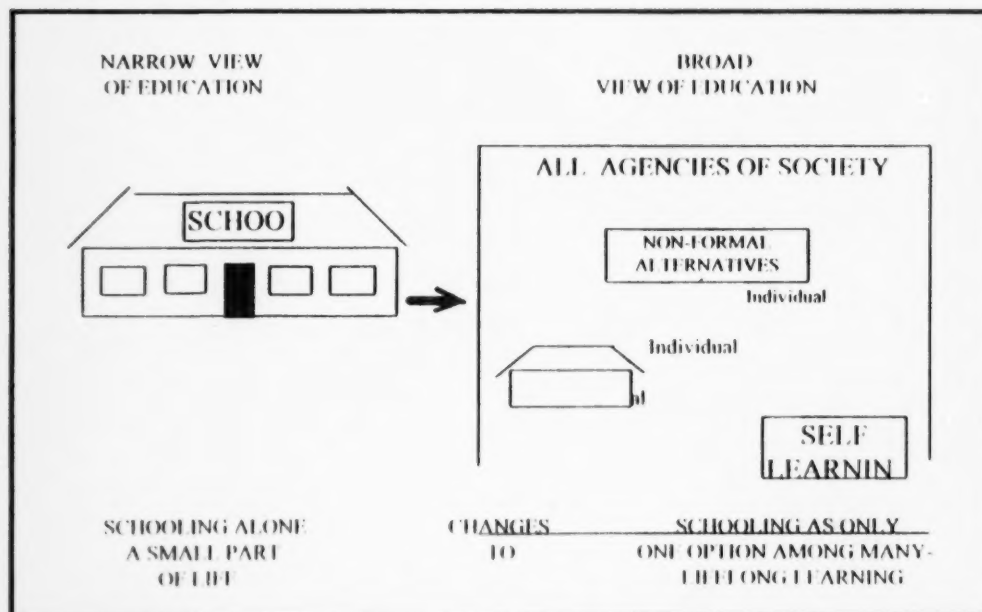


Figure : 2 A changing view of education

Continuing education programmes provide an opportunity for all citizens to truly integrate learning, working and living. These three aspects of personal development must grow together so that the overall quality of life improves and society as a whole becomes truly an "educated" society in the best sense of term.

UNESCO-PROAP organised a series of Technical Working Group Meetings of Experts to develop a series of APPEAL training materials. The resulting materials consisted of eight volumes under the series title **APPEAL Training Materials for Continuing Education Personnel (ATLP-CE)** with the following specific titles:

Volume I	New Policies and Directions for Continuing Education Programmes
Volume II	Post-Literacy Programmes
Volume III	Equivalency Programmes
Volume IV	Quality of Life Improvement Programmes
Volume V	Income-Generating Programmes
Volume VI	Individual Interest Promotion Programmes
Volume VII	Future Oriented Continuing Education Programmes
Volume VIII	A Manual for the Development of Learning Centres

The volumes provide planning and development frameworks to enable each Member State to develop an appropriate continuing education system and training of CE personnel at all levels according to its particular needs and circumstances.

A further point is that the ATLP-CE design is based on a systems approach to curriculum, materials design, delivery and training. It provides a development framework for each of the following aspects of continuing education:

- a) Conceptual framework for six types of programme;
- b) Curriculum and materials design for activities;
- c) Development of an infrastructure and delivery system;
- d) Curriculum for the training of continuing education personnel;
- e) Monitoring and evaluation of continuing education programmes and activities;
- f) Guidelines of the establishment and management of learning centres.

APPEAL also held a series of regional and sub-regional workshops to validate the draft versions of the various volumes and to ensure that key personnel from Member States become familiar with the materials so that they could initiate relevant in-country programmes and activities. Later on several workshops were held as regional and sub-regional activities specifically for ATLP-CE.

Six Types of Continuing Education

APPEAL has categorised continuing education into six types which are given below:

Type 1. Post-Literacy Programmes (PLPs). These aim to maintain and enhance basic literacy, numeracy and problem solving skills, giving individuals sufficient general basic work skills to function effectively in their societies.

Type 2. Equivalency Programmes (EPs) These are designed as alternative education programmes equivalent to existing formal general or vocational education.

Type 3. Income-Generating Programmes (IGPs). These help participants acquire or upgrade vocational skills and enable them to conduct income-generating activities. IGPs are vocational continuing education programmes delivered in a variety of contexts and which are directed in particular towards those people who are currently not self-sufficient, that is, those persons at or below the poverty line.

Type 4. Quality of Life Improvement Programmes (QLIPs). These aim to equip learners and the community with the essential knowledge, attitudes, values and skills to enable them to improve the quality of life as individuals and as members of the community.

Type 5. Individual Interest Promotion Programmes (IIPPs). These provide opportunity for individuals to participate in and learn about their chosen social, cultural, spiritual, health, physical and artistic interests.

Type 6. Future Oriented Programmes (FOPs). These give workers, professionals, regional and national community leaders, villagers, businessmen and planners new skills, knowledge and techniques to adopt themselves and their organisations to social and technological changes.

Further the concept of learning centres have been developed under APPEAL. Now in Asia and the Pacific, learning centres have emerged as key institutions for the delivery of continuing education. Learning centres are defined as follows:

Local and educational institutions outside the formal education system for villages or urban areas, usually set up and managed by local people to provide various learning opportunities for community development and improvement of people's quality of life.

2.2 Achievements/Improvements

The ATLTP-CE has been well received in the region. All participants attending regional and sub-regional workshops dealing with the various ATLTP-CE materials prepared action plans for follow-up activities at the national level. Already several countries have translated the ATLTP-CE volumes into their local languages. Those countries are Bangladesh, Cambodia, China, India, Indonesia, Laos, Republic of Korea, Thailand and Vietnam. Also in these workshops the feedback which have been received from the representatives of both the government and NGOs on the ATLTP-CE materials are as follows:

- a) ATLTP-CE brought improvement in formulation of policy, planning, management and systematic development of CE towards achieving human development in the broadest sense in the Asia-Pacific countries.
- b) The understanding of concept of continuing education has become clear. Continuing education is now being seen as an opportunity to engage in lifelong learning to pursue personal and socio-economic development of individual and also society.
- c) The ultimate goal of education i.e. learning society and the process for reaching the goal i.e. lifelong learning have been understood clearly to create a vision for the future of each country. A number of countries have initiated activities to redefine their goals of CE based on the concepts and activities pleaded in ATLTP-CE. Initiatives are being taken to bring out overall national policy on continuing education.
- d) Awareness have been created towards holistic approach of CE giving wide option i.e. types of programmes which are made available.
- e) A large number of CE personnel have become trained to undertake implementation of the new concepts of various CE programmes.

In short it could be said that ATLTP-CE has been able to remove weaknesses in the continuing education efforts and create a wide vision of a learning society in many Member States in the Asia-Pacific Region. In a learning society everybody learns and also teaches others throughout life. In such a society, schools and colleges as well as other organisations such as factories, business and social agencies work as education providers. Hence, the challenge to schooling society could be properly addressed if, and only if education is viewed as a single system consisting of formal and non-formal education sub-systems and involving informal learning.

3. APPEAL and the Eradication of Illiteracy (EOI)

The eradication of literacy requires a vast number of trained and dedicated teachers, supervisors and local organisers. Unfortunately, the Asia-Pacific region lacks the infrastructure to make these people effectively trained. Many of the efforts to train literacy personnel have been piecemeal and were often inadequately planned. These shortcomings are particularly prevalent in those countries where eradicating illiteracy remains a major challenge.

3.1 The Need for Literacy Training Materials

APPEAL identified the following problems regarding literacy programmes in Asia and the Pacific:

- a) Severe illiteracy problems persist among rural communities, urban slum dwellers, the physically disabled and early school leavers;
- b) The present training tends to be more or less ad hoc, lacking systematic overall national planning;
- c) Trainers do not always have the most suitable training materials for specific groups;
- d) There is inadequate development of programmes to train teacher trainers;
- e) Institutional infrastructures for training are very weak in most of the countries.

To help correct this situation, UNESCO convened a series of workshops that brought together literacy training experts for the purpose of developing a training system and appropriate training materials. To be useful, these materials were related to the specific needs of the various levels of personnel who were involved in the literacy programmes. Therefore, the APPEAL materials were prepared for three different groups of users: administrators (level A), supervisors (level B) and instructors (level C).

3.2 The APPEAL Response

3.2.1 APPEAL Training Materials for Literacy Personnel (ATLP)

As a result of intensive discussion, followed by material development and field trials, literacy experts from Asia and the Pacific produced the twelve volumes of APPEAL Training Materials for Literacy Personnel (ATLP). These materials were drawn from the rich experiences of specialists from the Member States of the region. The volumes cover literacy teaching activities ranging from principles of curriculum design to literacy programme evaluation and implementation procedures. It was intended that the volumes serve a practical purpose and be applied to literacy work. Therefore, exemplar manuals and teaching guides formed an important part of their content.

The scope and training levels of these books are given below with their titles.

Volume no.	Title and Scope	Level
1	Principles of Curriculum Design for Literacy Training	All
2	Principles of Resource Design for Literacy Training	All
3	Manual for Senior Administrators of Literacy Training Programmes	A
4	Manual for Supervisors - Resource Development and Training Procedures	B
5	Exemplar Training Manual - Extra Money for the Family	C
6	Exemplar Training Manual - Our Forests	C
7	Exemplar Training Manual - Village Cooperative	C
8	Exemplar Training Manual - Health Services	C
9	Specifications for Additional Exemplar Training Manuals	C and B
10	Post-Literacy Activities and Continuing Education	A and B
11	Evaluating a Literacy Training Programme	A and B
12	Implementing a Literacy Training Programme	All

The main aim of the twelve-volume set is to facilitate the development of a totally integrated and coherent literacy training system within a given country. At the same time, the materials may help in establishing some useful, internationally acceptable parameters for such programmes.

All volumes of ATLTP were initially developed in draft formats and were not finalised until tested and validated by using them as training resources in a series of six sub-regional workshops and one regional workshop for training literacy personnel held from 1989 to 1991.

The response by Member States to the ATLTP, especially those with lower rates of adult literacy, was very positive. In fact, even while the ATLTP volumes were in draft form several countries had translated them into their local languages.

The important feature of the ATLTP exemplar lesson materials is that they build in step-by-step guidelines and instructions for teachers (Level C personnel). This has been done on the assumption that it would not be practicable to provide comprehensive training for the many thousand or hundreds of thousands of literacy presenters employed in most countries either as government employees or volunteers. Each exemplar manual may be produced in two editions, one for the literacy learner and one for the literacy presenter/teacher. The training needs of Level C personnel are mainly addressed in the

Teacher's Guide incorporated into the special teacher's edition of each manual. A separate learner's book could be produced simply separating these materials.

3.2.2 ATLP Provides

- a) Guidelines for countries wishing to design a total literacy training programme that brings all elements and all levels together in a systematic way without imposing a particular structure;
- b) Guidelines of the development of a systematic curriculum that could meet the needs of individual countries;
- c) A set of principles that may be useful in developing a systematic programme for the training of literacy personnel;
- d) An approach to instructional design that applies the principles of andragogy to the organisation of suitable resources for teachers and learners;
- e) Guidelines for increasing the effectiveness of the literacy training materials already in use in the countries of the region;
- f) Suggestions for a system that may help literacy teachers present effective lessons through the encouragement of maximum participation by the learners;
- g) An introduction to a system of design that could facilitate assessment and evaluation of a national literacy programme;
- h) Help in developing useful, internationally understandable parameters for the implementation of literacy training programmes.

As mentioned earlier, the materials in this series were prepared by literacy training experts in Asia and the Pacific working together, sharing their experiences and expertise. These materials should be used by the countries in the Region as exemplars to develop their own materials based on their national goals and local needs in the context of APPEAL.

3.3 Outline of the Innovations

3.3.1 Literacy Training Curriculum

The development of training manuals for literacy personnel could not proceed without a well-structured, flexible curriculum framework designed to meet the needs of different clientele groups. The Regional Workshop on Development of Literacy Materials (1987) developed a set of guidelines to enable Member States to design and implement a literacy training curriculum acceptable to all agencies involved in the country.

In designing the exemplar literacy training curriculum, the following criteria were considered:

- a) Functional content showing logical development from concept to concept;
- b) Progressively built literacy skills;
- c) A concentrically planned curriculum enabling learners to repeatedly re-examine the main areas of functional content at deeper levels of understanding using steadily improving literacy skills;
- d) Literacy skills sequenced in levels of progression defined in terms of specified outcomes.
- e) A sufficiently flexible design catering to the needs of specific groups.

3.3.2 Linkage between Functional Content and Literacy Skills

Literacy skills have been divided into three levels:

- 1. Level I: Basic,
- 2. Level II: Middle, and
- 3. Level III: Self-learning.

Flexibility is provided through sub-levels that cater to specific needs. The functional content has been selected based on the immediate concerns of adult learners. Curriculum designers have identified four content areas for each programme; family life, economics and income, health, and civic consciousness. Selection of the areas was based on the consensus of literacy experts in the Regional Workshops reflecting the immediate concerns of most adult learners in the region. A practicable scope and a sequence of topics have been provided for each content area. It may be mentioned here that the curriculum framework is the integration of reading, writing and numerical competencies with functional knowledge.

To illustrate the linkage between literacy skills levels and content areas, a curriculum grid has been prepared. In the curriculum grid, each cell links a literacy level with a particular functional content area.

The instructional time apportioned over the three levels is in the approximate ratio of 3:2:1. The reason for this is that beginners need considerable time to develop basic skills. Once these skills have been established, progress is more rapid.

3.3.3 Systems approach to the design of learning materials

One of the weaknesses in the literacy programmes of the region as identified by UNESCO in 1985 survey was the lack of a systemic approach to the design of learning materials. In many cases the materials were more teacher-centred than learner-centred and failed to encourage active participation by adult learners.

To overcome these weakness ATLIP adopted an approach to instructional design for developing literacy training manuals based on a systems approach. In this approach learning sequences are organised as linear chains of input-process-out (IPO) cycles linked together as shown in Figure 3.

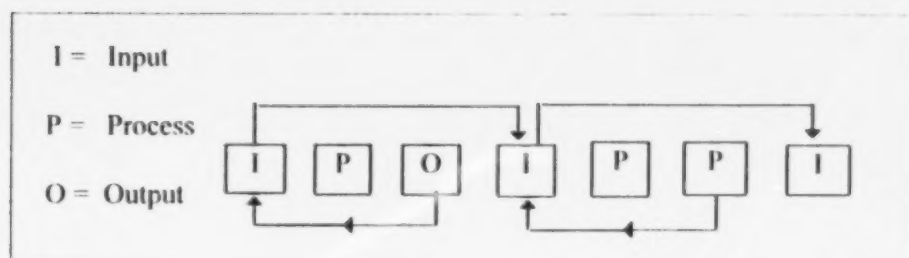


Figure 3 : A systems approach to the design of learning materials.

In any given manual designed for six to eight hours of active involvement, there may be as many as twelve or more IPO cycles.

As Figure 3 implies, the output of one IPO cycle feeds into the next. It also feeds back to the input phase of cycle, because the output phase is a practical manifestation of the input phase. This means that the input of each IPO cycle is not only the underlying generator of its own cycle, but also of the next cycle.

This simple design for the linear events in a learning sequence has very important advantages.

1. Because the processing and output steps are undertaken by the learner, the emphasis is on a learner-oriented rather than a teacher-oriented approach and active participation by the learner is ensured.
2. Awareness of IPO cycles in designing learning resources ensures that the instructional material is broken into small steps and that all relevant elements are brought together in time and space.
3. A variety of learning experiences can be built into the sequence, which will sustain interest and motivation and thus enhance the learning process. In any learning sequence, the way information is presented during the input phase, the method used for processing, and the type of output required should vary as much as possible from one IPO cycle to the next. Structuring the learning sequence around IPO cycles, therefore, ensures variety and makes learning easier.

The Learner's Workbook is organised step by step in the same sequence as the steps in the Teacher's Guide and all steps are numbered and laid out for easy use by the learner and the teacher. Instructions, response spaces and illustrations are provided using communication methods appropriate for the level of literacy development required for each particular lesson (module).

The teachers' editions of the training manuals have been developed in considerable detail to give step-by-step guidance on the presentation of the lesson materials. The teaching notes for each IPO stage give information on topics, timing, teaching steps, grouping, resources to be used and methods to be followed.

This details is considered necessary because, for many literacy teachers, it is virtually the only help and guidance they will have. In countries employing many hundreds or thousands of literacy teachers, it is impracticable to ensure that they will all be trained centrally or even attend a short-term training camp. Most will have to rely almost entirely on the help of the notes provided in the Teacher's Guide section of each manual.

3.3.4 Time considerations

The APPEAL recommended 200 contact hours to achieve a level of literacy which enables adults to continue learning on their own. That means the literacy training curriculum will be based on 200 hours of instruction including time for practicing skills. The instructional time proportioned over three levels in the approximate ratio of 3:2:1. The reason for this is that the beginners need considerable time to develop basic skills, whereas once these skills have been established progress is more rapid.

3.3.5 Flexibility

The whole curriculum is designed in a very scientific way in the shape of curriculum grid which outlines the functional contents along with the literacy skills. The training manuals are also arranged as a teaching sequence as per curriculum grid. Provision for extension of the curriculum grid to meet the specific need of any country has also been proposed in the ATLP. It may be mentioned here that each country should develop its own curriculum based on its national goal and local needs. It is understood that each country will develop their training materials underlining the principles and applying the ATLP techniques of curriculum design to suit local circumstances. The curriculum plan also provides a framework for the development of training manuals for literacy personnel.

4. The Consultation and Implementation Mechanism of APPEAL

APPEAL has set up a mechanism where by Member States continuously participate in decision-making and implementation of its activities. APPEAL has a Regional Consultation Mechanism called the "Regional Coordination Committee for APPEAL" which is composed of Chairpersons of National Coordination Committees of APPEAL and/or those who are in charge of APPEAL Programmes in Member States. It meets once every two years. Each Member State has constituted National Coordination Committee for APPEAL with the participation of persons responsible for primary education, literacy and continuing education. The committee has participation by NGOs and representatives from other departments in each government as well.

5. Evaluation of ATLP

In 1991, APPEAL initiated a major study to assess the impact of ATLP on the improvement of literacy programmes in the region. The evaluation report was issued in 1992. The major findings of the evaluation are summarised below:

Summary of main findings of a study on the impact of ATLP on the adult literacy programmes of eleven participating Member States - 1991

1. Significance of ATLP

- 1.1 The participating Member States have attached significance to ATLP as an important step toward achieving the objectives of APPEAL, particularly in relation to training of literacy personnel, improving curricula and developing training materials

2. ATLP Materials

- 2.1 The ATLP materials met the long-left need for appropriate literacy resource materials for literacy personnel in the Member States. As a matter of fact, it filled the vacuum left by the lack of such materials.
- 2.2 The participatory approach adopted in the development of ATLP materials not only helped build a sense of involvement and commitment among the regional literacy experts, but also enabled them to play a leading role in dissemination and training activities as resource persons and consultants at the sub-regional and national levels.
- 2.3 The quality and relevance of ATLP materials were highly appreciated. However, there is a need for more elaboration (the IPO approach) and more illustrations (such as in the design of literacy materials) of some topics.
- 2.4 Several countries have translated and printed ATLP materials in their national languages for wider dissemination.
- 2.5 Understanding of ATLP materials was good among Level B personnel, and less so among Level A personnel.

3. The ATLP Approach

- 3.1 The design principles of curriculum development and the systems approach to designing training materials (IPO) as advocated in ATLP have been appreciated and used by Member States. Local needs assessment methods have been widely used.
- 3.2 Some Member States have developed a literacy curriculum in line with ATLP and others have refined their curricula using the recommended integrated

approach.

3.3 Several countries have developed training manuals for trainers and teachers' guides in line with ATLP.

3.4 ATLP has so far had little impact on networking of literacy training institutions either at the national level or at the sub-regional and regional levels.

4. National-level Activities

4.1 One of the significant impacts of ATLP is that it generated a series of literacy promotion activities at the national and sub-national levels.

4.2 Most frequently conducted activities at the national/sub-national level includes literacy personnel training programmes, orientation of curriculum and training materials.

4.3 The ATLP workshops and training programmes have considerably upgraded the technical competencies of literacy personnel in the Member States. However, more intensive training programmes are required for Level C personnel.

5. Potentially of ATLP

5.1 The potentiality of ATLP is rated high by key personnel, particularly in the improvement of the quality of training programmes and materials, and they anticipate similar efforts in launching and consolidating post-literacy and continuing education programmes.

It is remarkable that the evaluators were able to identify such positive outcomes just two years after the final editions of the twelve volumes were published. They also found some problems and constraints but these were largely extrinsic and outside the frame work of ATLP activities. They included factors such as shortage of funds, material resources and personnel, and in some cases the lack of political will and commitment at senior levels of government and an absence of knowledge about ATLP among policy makers.

6. Conclusion

APPEAL, under its Training Programme for Literacy Personnel, has provided a highly efficient approach to reducing the magnitude of the problem of illiteracy through systematic training of personnel. APPEAL Training Materials for Continuing Education Personnel (ATLP-CE) deals with six types of continuing education in a systematic and practical way - post-literacy programmes, equivalency programmes, continuing education for income generation, programmes for enhancing quality of life, individual interest programmes and programmes to help in forward thinking and future oriented planning.

APPEAL has also responded to the special education needs of women and girls through the UNESCO-UNDP Project "Expansion of Skills-Based Literacy Programmes for Women and Girls".

The success of ATLP can be measured by the responses of Member States, most of which have adopted those recommendations, programmes, exemplars, procedures and activities that have met their particular needs. This response has been widespread and even in the few years of implementing ATLP and ATLP-CE programmes there has been considerable impact on the rate and quality of educational development. Almost all APPEAL publications, especially the ATLP and ATLP-CE books, have been translated into national languages and adapted for local use in many Member States. Training programmes have been modified and implemented and more systematic approaches adopted in many countries to improve educational access, to promote education for women and girls, to eradicate illiteracy and improve adult literacy competencies, and to foster the development of life-long continuing education.

NOTES AND REFERENCES

1. Sakya, T.M.: Education for All by the Year 2000: Problems and Prospects, Bangkok: UNESCO Principal Regional Office for Asia and the Pacific, 1993.
2. UNESCO-PROAP: Continuing Education: New Policies and Directions (APPEAL Training Materials for Continuing Education Personnel (ATLP-CE, Volumes 1-8), Bangkok: UNESCO Principal Regional Office for Asia and the Pacific, 1993.
3. UNESCO-PROAP: APPEAL Training Materials for Literacy Personnel (ATLP Volumes 1-12), Bangkok: UNESCO Principal Regional Office for Asia and the Pacific, 1989.
4. UNESCO-PROAP: Challenges of Education for All in Asia and the Pacific and the APPEAL Response, Bangkok, UNESCO-PROAP, 1997.
5. UNESCO-PROAP: APPEAL Report to the first meeting of the Inter-governmental Regional Committee on Education in Asia and the Pacific (EDCOM), 1996 UNESCO-PROAP, Bangkok.

PROMOTING LITERACY AND CONTINUING EDUCATION AT THE GRASSROOTS LEVEL

Shakuntala Bapat

I. The Context

Concern for the spread of literacy is worldwide. Developed countries have already achieved high levels of literacy and education. This has helped them to become industrialized with the inputs of science and technology. Most of the western countries had become literate and had universal primary education by the early years of the twentieth century. Some Asian countries also made rapid strides in primary education, literacy and further education between 1950 and 1980. However, the countries which were under colonial governments for a hundred years or more, remained educationally backward. The countries in the Indian sub-continent belong to this group. After the Second World War these countries gained independence. This enabled them to make proper plans for spreading education and improving their damaged economies. Under colonial rule, the urban areas in these countries became fairly advanced. They established institutions for the study of modern medicine, engineering, science and technology. Urban industries flourished. Urban incomes increased. The urban middle class became westernized. It treated the rural people as ignorant and inferior. It favoured a uniform system of education for all fully controlled by the urban bureaucracy. This education was unsuitable for the rural and tribal areas. The urban model of primary education failed in these areas because it ignored local needs. The rural population was dependent on agriculture, artisanship, and non-crop food-production. Its occupations were controlled by the seasons and by the natural environment. These needs required an alternative system of rural education. But this was not permitted by the colonial government's policies. The middle class, which provided bureaucrats to government, neglected rural education. Rural parents and children had no use for academic urban education. As a result, rural children got no education at all. They worked with their parents and grew up into illiterate adults.

When Mahatma Gandhi started his non-violent struggle for India's freedom, he also formulated an alternative system of rural education. He was convinced that a system which combines the 'Head, Hand, Heart' in the process of teaching and learning, was essential for the political and economic freedom of India. He called it 'Basic Education'. His main idea was to regenerate India's rural areas through the learning of (a) crafts and recognizing the dignity of labour, (b) reviving the indigenous knowledge and skills of the people in agriculture and artisanship, (c) making all work ethical, efficient, economically productive and socially useful, (d) using the mother-tongue as medium of instruction to make the process of teaching-learning more transparent, and (e) adjusting learning within seven years of schooling from age 7 to 14, to complete studies of the matriculation level. In the British model, much energy and time had to be devoted to grappling with English as the medium of instruction and it took eleven years i.e. age 6-17, to reach matriculation. Unfortunately, the urban elite, the rural rich, and educational administrators rejected Gandhiji's Basic Education model.

When India became independent, the western-style formal school model was universalized, with some modifications. But it failed to attract rural pupils, especially girls. After a few years, enrollments increased but irregular attendance and dropout were high. The quality of teaching-learning remained low. The urban-rural divide in primary education and literacy grew rapidly. This has become an obstruction to social and economic development of India. If literacy and primary education in the rural areas do not increase in quantity and quality, the various good schemes made by government for rural development will remain on paper. It is now clear that lack of appropriate

educational opportunities have added to rural poverty and lowered the status of women. Agricultural growth is insufficient in relation to the growing population. Environmental degradation requires urgent attention. For India, what is important now is food security, clean water supply, enough supply of energy, and education of the rural people to achieve development, with inputs of science and technology.

India is a vast country with wide diversity of development levels. No uniform model of education can serve the population of about 960 million. Geographical and climatic diversity in India ranges from ice-bound mountains in the north to a warm seas-coast climate in the south. There is considerable historical and cultural diversity among the people. A flexible education system to suit this variety has to be developed. From this viewpoint, research institutions and NGOs are now engaged in formulating alternative development models for different areas and population groups. These efforts have as their focus 'sustainable development' which includes education of the people for enabling them to analyze and solve their problems in a constructive manner. In India, the basic tenet for 'sustainable development' is 'Human Development' as visualized in India's Constitution. This vision of sustainability of human society is based on the values of freedom, brotherhood, dignity of the individual, equality for all regardless of race, creed, and gender. The Constitution also provides for 'positive discrimination' or 'affirmative action' in the interest of the weaker sections of society. It provides an inalienable 'right to life' which includes the 'right to education'. The text of this paper is based on these contexts which are foundational to educational and social change. Besides, the centrality of women's education and empowerment is viewed here as the cornerstone of sustainable development. Literacy and continuing education of rural women are essential for this change and development process.

II. Sustainable Development : Major Factors

Nearly 65 per cent of India's population lives in the rural areas. Of this, about 50 per cent consists of girls and women. The male-female ratio in India is 927 women to 1000 men. This adverse ratio would have to move towards a true 50:50 proportion. It is obvious that it is in the rural areas that the women's situation must improve, as early as possible, for the eradication of poverty and bringing about sustainable development. Extensive research in social and natural sciences has shown that sustainable development requires prioritized action on ten inter-connected fronts. These are (i) Education for All, (ii) Health for All, (iii) Food security, (iv) Adequacy of energy sources, (v) Strengthening social cohesion and stabilizing the family, (vi) Special programmes for providing equality of opportunity for the marginalized socio-economic groups, (vii) Removal of gender disparities and empowerment of women, (viii) Preventing environmental degradation and restoring the balance of the eco-system, (ix) Providing to rural masses ready and constant access to technological knowledge for improved agriculture, agro-based occupations, artisanship, small industries, and (x) Knowledge of marketing, along with sources for obtaining seed-money and credit facilities.

The main strategy for reaching the goal of sustainable development is restoration of self-confidence to the rural people and particularly to marginalized groups like women. It is now admitted by highly educated Indian intellectuals that these groups possess considerable indigenous knowledge and skills. They also feel that if reinforced by new technologies, the indigenous capabilities of the people can give them access to better livelihood opportunities and increased self-confidence to manage their lives better. Therefore, enabling the rural people, especially women, to acquire and use new knowledge made available by science and technology, is an important path towards sustainable development. Facilitating self-development of the rural people through their own knowledge and techniques combined with new knowledge can lead them to become effective members of their family and community. Thus, science and technology inputs which recognize the knowledge rooted in the local culture of the masses, would help in 'cultivating' the people's knowledge further for sustainable socio-economic development

at the micro-level. This process of the merging of the old and new knowledge in a rational manner would protect the people's autonomy. It would also save new technologies from becoming 'rootless'.

Sustainable development is an interdisciplinary and multisectoral concept. It connotes (i) sustainable livelihoods, (ii) maintaining cultural diversity, (iii) protecting bio-diversity, (iv) modernization of society through widening the people's occupational choices, (v) promoting optimistic life-style, (vi) transformation of production through application of a mix of indigenous and modern science and technology, (vii) co-operative decision-making at the level of the family and the community, (viii) acceptance of the need for desirable socio-economic change, (ix) preventing the degradation of the environment, and (x) working for achievement of peace through creative partnerships and tolerance of differences.

Sustainable development is a transformational process. It is dynamic. By nature, it is continuous non-formal education for self-development and social development. It covers all ages and all segments of a given community. It results in tangible benefits to the people and motivates them to learn and work further in a socially and economically productive manner. It stimulates them to become inventive so as to add to their cultural inheritances. In this process they become optimistic change agents. Thus, non-formal, continuous, purposive education and sustainable development become interdependent forces for socio-economic transformation. Uplift of the oppressed and marginalized groups and, especially, women's empowerment are essential elements in this process.

III. Empowerment of Rural Women for Sustainable Development

In essence, sustainable development is human development. Its basis are (a) access to knowledge, (b) skills to convert knowledge into action for improving the standard of living, (c) social, political, and economic freedom, (d) creative addition to the progress of human culture, and (e) cooperation within the family and the community. The role of women in sustainable development has always been significant. But it is not always recognized as such. From time immemorial, preventive, promotive, and curative health processes have been looked after by women in their families and in the neighbourhood as well. Traditionally, women have been (and still are) birth-attendants, especially in rural and tribal areas. Older women are a repository of knowledge about indigenous medicine. Most rural women are conversant with the habits and usefulness of the plants, animals, birds, insects, reptiles and all kinds of things in their environment. Their closeness to nature arouses in them respect and affection for all things in the environment. This is reflected in many of their social practices and religious rituals.

In India, rural women observe rituals and festivals closely related to natural phenomena and the eco-system. There are rituals which welcome the rainy season, the spring, the onset of autumn and even winter. Each season brings with it new forms of life, insects, animals, birds. Festivals often reward the reptiles, animals, birds and plants that help man in his toils and tribulations. Thus, women celebrate a cobra festival and offer milk to this reptile which destroys the rats in their fields. Women feed the bullocks with sweets on a special festival-days treating them as respected helpers in ploughing the fields. Cows are worshipped because they provide milk. In spring, many women observe some fasting-days in honour of the cuckoo bird. Plants like Tulsi (Basil), hibiscus, jasmines, marigold, frangipani and so on, are planted and protected for worship of certain deities and also for medicinal purposes. The banyan tree, peepal (bo-tree), neem, cassias and baubins of various types are worshipped and protected as essential for rituals, food, fuel, fodder, medicine, shade and for attracting bird-life. For fuel, women never fell the trees but collect only dry twigs and bio-mass. In rural India, women are the true protectors of bio-diversity and environmental balance.

Rural women are the main producers of food as nearly 94 per cent of them work in agriculture and subsidiary occupations. In the backyard of village-homes, they grow vegetables and fruit trees like papaya, banana, lemons and so on. They tend the family's cattle, goats and poultry. Besides, they do home management. Their physical labour is endless. They fetch water, fuel and other forest produce from long distances. They carry loads of grain and vegetables. They are so hard pressed for time that they cannot participate in the social and political affairs of the community. They miss the opportunity to gather knowledge about technology-development projects, government schemes, and the rapid flows of information now pouring into the rural areas. They get left out of development plans. Their non-participation is often interpreted by village-leaders and government officers as gender-based lack of interest in social affairs or even lack of intelligence to understand the world outside the home. Their 'time-poverty' keeps them poor in socio-political matters. Their traditional skills also begin to be outdated since they are kept unaware of new production-technologies. New information on health, nutrition, citizenship rights, does not reach them. Their illiteracy becomes a serious handicap in acquiring new information and skills. They begin to feel inferior and hopeless. This is the greatest obstruction to sustainable development. Recognizing this situation, innovative programmes for empowerment of rural women have been launched, in collaboration with rural women, at the Centre for Development of Rural Women which operates from a village called Shivapur in Pune District of Maharashtra state.

IV. Centre for Development of Rural Women : Objectives and Programmes

Genesis

The Centre for Development of Rural Women has been established by the Indian Institute of Education, Pune, which is engaged in multidisciplinary research in the interdependence of education and development. Along with conceptual research, it conducts large projects of action-research in different types of rural areas. Education for All and Health for All are the twin objectives of the Institute. While conducting action-research projects in non-formal education for girls and women with special focus on science and technology, in personal and environmental health and hygiene and post-literacy learning, the Institute realized the need to shift from short-term projects to sustained innovative work for development of rural women, in an integrated fashion. Since the Institute combines studies in social sciences and natural sciences in relation to rural development and socio-economic change, and since it had already investigated, to some extent, technological literacy in relation to the people's cultural values, it established the Centre for Development of Rural Women as a permanent project for evolving alternatives strategies for sustainable development with women at centre-stage. Its activities began in 1994.

Objectives and Scope of CDRW

The objectives and scope of the CDRW are : (i) to develop a grass-roots system of education for all, for sustainable development, (ii) to focus on multifaceted education and empowerment activities for girls and women, (iii) to develop non-formal vocational education programmes for girls and women with hands-on training and inputs of science and technology, (iv) to develop in girls and women the scientific temper and investigative urges for enabling them to become 'bare-foot inventors' of productive devices and processes, (v) to enable women to effectively play their citizenship roles by making available to them legal and political information and building up their leadership qualities, (vi) to encourage efficient local farmers, artisans, health workers and others to build themselves up into a rural cadre of post-literacy learners and trainers and to create for them further opportunities to increase their own knowledge and skills, (vii) to bring formal and non-formal education closer together so as to make formal education flexible and non-formal education performance-oriented, (viii) to ensure that science and technology harmonize with human values and the cultural contexts of the people, (ix) to

promote participatory micro-planning for development, and (x) to conduct research and experimentation in problems of rural women and children with a view to building up strong human resources at the level of the family and the community.

Coverage and Programmes

In due course, the CDRW is expected to emerge as a regional centre for conducting and demonstrating innovative programmes for women's development along with child development. Its emphasis will be on science and technology inputs. Studies in the cultural contexts of development, already started, will be enlarged in scope, in collaboration with other centres of the Indian Institute of Education. Modalities for continuing education such as training programmes, camps, library-network, computer-modules, multimedia open education, and so on would be adopted in various ways for different types of learning needs.

The operational area of the Centre consists of 30 villages with a population of about 50,000. At present, the Centre has concentrated on seven villages in its vicinity, i.e. a periphery of about 12 kms. The population covered is about 10,000.

The programmes focus on girls and women. Those launched so far are : Studying the cultural contexts of literacy and primary education by utilizing semi-educated village youth and knowledgeable women and young girls as investigators; training of women members of Gram Panchayats (Village Councils); multivariate plantation of trees; cultivation of vegetables, peanuts, a new variety of paddy, flowering plants; use of vermicompost and natural pest-repellents; using new tools and techniques of growing plant nurseries and conducting farming operations; reading circles and group-singing meets; dramatics for problem-solving, especially for adolescent girls; summer camps for interaction between in-school and out-of-school girls; health camps with women's teams working as volunteers and organizers; cookery contests for reviving traditional dishes rich in nutrition; training in yogic exercises; study-visits to science and technology projects of the Institute; a child-to-child programme in health and cultural activities, helped by women and adolescent girls; vocational training programmes for market-related production of items such as bags for different purposes, scarves, embroidered articles, hand-knitted and machine-knitted garments, tailoring and sewing of clothing having a market-demand, catering for large parties on a commercial basis, and so on. The Centre conducts a Child Recreation Centre for 30 children, entirely managed by the parents, mostly by women. Also, on demand from men, the Centre conducts a yogic exercises class for them.

In relation to vocational education, women's meetings are organized with entrepreneurs and small industry managers. The purchase of raw materials, production-time and labour, sale-price, advertising methods, are items to be learnt. Apart from this programme, the Centre has launched the following programmes : goat-raising, poultry, rural pathology laboratory (for semi-schooled girls), making vermicompost for demonstration farming. The current programme which is crucial for empowerment of women is 'small-savings groups' as the first step to forming cooperatives. Eleven such groups are functioning. Observing the efficient working of these groups, two men's 'savings groups' have also come up spontaneously. The savings groups of women are linked up with rural banks. A special feature of these groups is the decision of their members to use some of their savings to improve the nutrition of preschool children and to give presents to children who perform well in different competitions organized by these groups.

New Directions

The Centre is now at a stage of readiness to set up an 'Information-cum-Demonstration Centre' for women and men farmers to serve them in such matters as soil-

analysis, water-analysis, observing new techniques of farming, using computerized data, and so on. Alongside, a Science and Technology Centre is being set up for children of the 6-14 age-group and for primary and secondary school teachers from the centre's operational area.

About 200 women visit the Centre almost regularly, for some programme or the other. This year, they celebrated the full-moon night on 15th October as the first social event they had ever organized by themselves. They managed it entirely with their own contribution in kind, labour and money.

The Centre has purposely kept a small staff of which most members are local. For vocational education, also, local women were first trained as trainers. The aim is to create a 'learning community'. In each of the Centre's project villages, there is a mix of learners who are teachers in some respect or the other, and teachers who continue to be learners. The Centre expects that this modality of continuing education will help in four ways : it will create a cohesive and inventive learning-community with women and girls taking the lead; it will stabilize families by building up helpful mutual relations between men and women, adults and children; it will help incorporate science and technology in the life of the people and particularly the new generation, through the mediation of women; and it will harmonize socio-economic and political processes with the culture of the people, so as to lead to sustainable development.

In this entire process of change, the role of the CDRW is stimulative and not interventionist. It helps rural women to engage in the process of analytical reflection and praxis. This is done through discussion. As a result, the organized action of the women and the community becomes self-directed and, hence, self-sustained. The urge for change is internalized by them. According to the philosophy of the Indian Institute of Education, this is the best methodology for protecting the values of the people's culture and enabling them to develop an authentic civil society under women's care and leadership. A society which is based on equality and mutual respect is undoubtedly essential for politico-economic balance. It is the mainroad for achieving human development which is the goal of CDRW.

REGENERATING EDUCATIONAL INNOVATIONS FOR SUSTAINABLE DEVELOPMENT

Zhang Tiedao

I. Sustainable Development

Perhaps the notion of sustainable development has been the most increasingly stimulating theme both among academic community and among policy-makers with regard to any development-related sectors e.g. economic, demographical, ecological, cultural, educational and so on.

According to Unesco Bangkok (1997), sustainable development refers to development that fulfills the current needs of populations without compromising the needs of future generations. Currently the notion has also been a most involving topic for worldwide debate.

The Chinese Academy of Science (1996) undertook a long-term study on the national development policies based on their macro-analyses on such key issues as population, natural resources and environment. In spite of the remarkable progress achieved in recent decades, China was alerted with four major development dilemmas namely the rapid population growth vs. increase of aging population; growing population pressure vs. limited holding capacity of natural resources; deteriorating environment vs. urbanization/industrialization; and, increasing demand for grain supply vs. lack of potential to raise the grain output. To tackle with these challenges an integrated sustainable development strategy was proposed with three broad action areas, i.e. (1) To meet the basic needs of all, including not only essential facilities for survival such as food, fuel, shelter, transport, but also the basic rights for employment, education, social insurance; (2) To reform structures of industry, employment and consumption thus to promote productivity and economic development, and to raise the income level; (3) To maintain a balanced development between population growth, economic betterment and rational employment of natural resources.

Other scholars (Meng and Li, 1995, Yu and Yang, 1997) carried the rationale of sustainable development to advocate a fundamental paradigm shift for social development theories, that is, a shift from previous economic growth dominance to overall social development; a shift from the welfare of a particular population group or generation to the well-being of the whole mankind and many generations to come; and a shift from the dominance of the employment of natural resources to the development of human resources. It became apparent over the debate that since the natural resources are non-recurrent and dependent much upon the quality of human beings while the human capital, once equipped with such qualities as imagination, creativity and moral accomplishments will become self-reproductive and hence more sustainable for development pursuits. Therefore, the focal point for acquiring sustainable development has now been redirected at the development of human potentialities such as their competencies in learning to know, learning to do, learning to live together and learning to be (Delor, 1996). In this regard, the education system, particularly at basic stage, has now been confronted with the most demanding task - to prepare all learners of different genders, ages, social or ethnic status for the sustainable development both of themselves and their communities.

II. Basic Education

The basic education, in the expanded Unesco perspective, refers to primary education, literacy and continuing education programs intended to meet basic learning needs, namely the knowledge, skills, attitude and values necessary for people to survive, to improve the quality of their lives, and to continue learning (Inter-Agency Commission, 1990:ix).

Basic education is increasingly recognized as an empowering process for both individuals and a nation as a whole. A recent UNESCO-UNDP joint study reaffirmed that the contribution of basic education to development lies not only in its potential function in facilitating the human capital formation but also in promotion of farm productivity, reduction in fertility rates, improvement of health and other quality of life indicators of families (APPEAL, 1996). Similarly in China, the basic education is now nationally

accepted as the foundation to upgrade the quality of the citizens and to prepare competent expertise for the next century. Therefore, the basic education system is expected to lay a solid foundation for the steady individual development with necessary knowledge in science and culture, appropriate moral values and health, and proper skills for self-directed learning and problem-solving (Li, 1996). With this guidelines the current nine-year compulsory education program is geared to provide the learners with more opportunities for schooling especially for those disadvantaged population groups, and more accountable quality of available learning experience

III. Educational Innovation

In the west, the basic notion of the term "innovation" has been described as "to make changes" or "do something in a new way" (Webster, 1983). In the Chinese language, "innovate" has been more extensively used as a four-character phrase "ge-gu-ding-xin", meaning change the out-dated with the new (C'hai, 1979). The term "innovations" in the present days are often used for new methods, operations or unconventional matters (Lu, 1993). Educational innovation, according to Rowntree (1992: 213), was defined as "the promotion of new ideas and methods within education especially in respect of curriculum". In the Unesco view, educational innovation seems to be a positive mechanism for a more desirable performance when the notion was stated as a "deliberate process of partial change leading either to a modification of the objectives of a particular educational practice or to a modification of the channels used to attain these objectives. Such innovation very often consists of adapting an educational situation to a change which has already taken place within or outside the education system, thereby making it possible to reestablish an equilibrium which has been upset (Unesco 1984: 59).

In practice, as the author has experienced, educational innovations prove to be facilitative for the on-going educational endeavors. In other words educational innovations tend to intervene the education practice in an alternative manner. Unlike the term of "re-form", which tends to stage thorough changes and thus in some cases breaks the continuity, innovations usually adopt certain constructive yet incremental approach so as to supplement or reinforce the operation of the existing infrastructure and are, therefore, more involving for extensive participation and the sustainability. Besides innovations are developmental in nature in that they tend not only to contribute to the better performance of the movement in action but also regenerate the vigor for further and more effective innovations. Such a situation has been illustrated with three innovative programs in China respectively on raising the achievement level of children in primary education, on promotion of primary education of girls and disadvantaged population groups, and on the literacy program for rural poverty alleviation (Li, 1997; Zhang and Lally, 1996; Zhang, 1997).

With this belief the researcher would conclude by saying that significance of truly educational innovations lies in their potential to facilitates the sustainability of the on-going education programs as well as their own development.

References

- APPEAL. 1996. Reorienting Literacy and Basic Education Towards Poverty Alleviation and Improvement of Quality of Life - A Conceptual Framework. Unesco principal Regional Office for Asia and the Pacific. Bangkok.
- Chinese Academy of Science. 1989. Survival and Development - A Study of the Long-term Development of China. Science Press. Beijing (Chinese).
- Delor J. et. al. 1996. Learning: The Treasure within. Unesco. Paris.
- Inter-Agency Commission for World Conference on Education for All. 1990. Meeting Basic Learning Needs: A Vision for the 1990s. Unicef House. New York.
- Li Lan Qing. Basic Education as Foundation for Better Citizenship and More Competent Expertise for the 21st Century. In Xinhua Wenzhai June 1996. p.p.142-146.
- Li Xing-guo. Literacy Program for Rural Youths and Adults in Guizhou Province. Submitted at Asia Literacy Regional Forum, Manila, Philippines. May 5-9, 1997.
- Lu Gusong. 1993. The English-Chinese Dictionary. Shanghai Translation Press. Shanghai.
- Meng Xianzhong and Li Jinzhao. Theories and Strategies for Social Development in 21st Century. In Xinhua Wenzhai October 1995. p.p.16-21.
- Rowntree D. 1992. An English Dictionary of Education with Chinese Translation. Educational Science Press. Beijing.
- Editorial Board. 1979. Ci Hai. Shanghai Dictionary Press. Shanghai.
- Yu Peiyuan and Yang Jianxiang. A Philosophical Perspective on Sustainable Development. In Xinhua Wenzhai July 1997. p.p.22-24.
- Unesco. 1984. Glossary of Educational Technology Terms. Paris.
- Unesco Principal Regional Office for Asia and the Pacific. 1997. Background Information on Third UNESCO-ACEID International Conference on Educational Innovation for Sustainable Development. Bangkok.
- Zhang Tiedao and Mike Lally. 1996. Improving Primary Education in Disadvantaged Contexts. Unesco Principal Regional Office for Asia and the Pacific. Bangkok.
- Zhang Tiedao Evaluation Report on Pilot Project on Promotion of Primary Education of Girls and Disadvantaged Population Groups in Gansu Province. A paper presented at Asia Literacy Regional Forum, Manila, Philippines. May 5-9, 1997.

ENHANCING THE QUALITY AND LEARNING ACHIEVEMENT OF CHILDREN AND YOUTH

Minda C. Sutaria

Introduction

Learning is the *raison d'être* of schools. We need schools in order to provide children an environment in which their learning can be encouraged, guided and facilitated.

Parents send their children to school in order to learn, and they prefer to send them to schools in which they believe they can learn best. These schools are perceived to be the better ones. Judgment on such schools is usually based on learning achievement which is largely gauged through success rates in pencil and paper tests coupled with observation of behavior change.

Enhancing Learning Achievement: Some Significant Factors

Based on learning achievement, schools are generally classified as effective and ineffective schools, or as good and bad schools. What makes a school effective or ineffective? good or bad?

Postlewaithe and Ross (IEA, 1992) cite four factors that affect learning achievement and determine whether a school is effective or ineffective. They mention the location of the school, how it is equipped, the quality of its teachers and the quality of its management as factors that influence the effectiveness of a school.

Schools with high learning achievement are usually located in privileged areas. In such areas, parents care about their children's education, health and nutrition. They coach them in their studies, evince interest in their school surround them with books and other learning materials and get them involved in various stimulating activities at home and in the community.

Schools registering high learning achievement are usually better equipped than those with low learning achievement. These schools generally have ample space for the day-to-day learning activities of students and have abundant learning materials. Class sizes are small, and the classrooms are appropriately designed, ventilated and furnished.

High-learning-achievement-schools have good teachers who master their subject matter and require their students to achieve according to high standards of learning set. They employ a variety of teaching strategies to suit the different learning styles and varied interests and backgrounds of their students. They organize materials for effective learning and systematically derive feedback on what has not been learned and provide varied opportunities for students to master intended learnings that still fall short of the standards set.

The management style of the school principal impacts on learning achievement. Schools with high learning achievement are usually managed by principals who are capable of providing enthusiastic, creative and inspiring leadership which is reflected in the pedagogy and educational and social climate of the school.

A study of schools in developing countries by Lockheed and Vespoor (1991) reveals that the quality of learning is determined by four factors of input and process, namely, curriculum, instructional materials, learning time and teaching and the learner's teachability.

Schools enhance learning achievement by making the curriculum a coherent, appropriately paced and sequenced instructional program. The success of this approach lies in the readability of materials, accuracy of content and quality of learner-oriented instructional design.

In spite of the depressed condition in developing countries, some schools manage to help students learn what the curriculum calls for with the aid of good textbooks and teacher guides. Enhancing learning requires provision of good textbooks and teacher guides. Since textbooks undergird the curriculum, they are the single most important instructional material (Heyneman and Loxley, 1983).

There is research evidence that points to the consistent relationship between learning and the amount of time available for teaching and how well that time is used by students and by teachers in order to make them learn in school. When teachers spend more time in facilitating learning, students learn more, specially if the teachers' instructional efforts are well focused on learning objectives set and the students' motivational levels are kept high.

Learning achievement is enhanced in schools where the teachers exert efforts find out to what students know and what they still need to learn by monitoring their work through quizzes and periodic tests, homework, classroom questions, standardized tests and other activities that reveal the extent of mastery of what is taught.

Learning achievement is conditioned in part by prior learning experience and the health and nutritional status of the learner. Studies in the Philippines (Florencio, 1988) reveal that pupils with good nutritional status have significantly higher levels of learning achievement and mental ability than those with poor nutritional status.

Home and family background impacts on learning achievement. Children whose homes provide an evocative atmosphere, full of stimulating objects and learning materials, consistently learn more rapidly than those from deprived backgrounds.

Social class is a significant predictor of learning achievement. This is confirmed by twenty-eight out of thirty-seven studies examining the determinants of school achievement in developing countries (Lockheed and Vespoor, 1992).

The task of enhancing learning achievement in developing countries is extremely more difficult than it is in developed countries because not all possible avenues for

improvement of inputs and process are easily affordable. Developing countries will need to focus on cost-effective alternatives that are known to enhance learning.

An Innovative Alternative for Enhancing Quality and Learning Achievement

The need for cost-effective alternatives to solve the twin problems of low learning achievement and high dropout rates propelled SEAMEO INNOTECH* to develop an innovative alternative for enhancing learning achievement and reducing dropout rate. These problems have plagued education systems in the developing countries for decades and have spawned considerable educational wastage which they could ill afford.

Originally called "A Learning System for Education for All," the alternative is a scheme now more popularly known as "No Drops LS-EFA," meaning "No Dropout Learning System for Education for All," or LS-EFA for short.

The scheme makes enhancement of learning achievement the main strategy for keeping grade school children in school until they finish grade six. In all the six elementary schools in which LS-EFA was tried out, potential dropouts were helped to raise their achievement levels. Consequently they learned to like their school attended it regularly and did not drop out. Since their attendance in school became regular, they had more time for learning, and this contributed to the enhancement of their learning achievement.

LS-EFA is an integrated and flexible learning system that is responsive to the needs of children of school age. It provides access to quality basic education, regardless of their socio-economic circumstances. In this system, every child enrolled in school becomes functionally literate, develops thinking skills and the ability to learn how to learn. Since children are helped to achieve in school, they are happy to be in it. Consequently they attend classes regularly and do not drop out. Learning achievement becomes an essential factor for keeping children in school until they complete grade six.

Two components define the learning system in LS-EFA: diagnosis and prevention and cure. At an early stage, children at risk of dropping out of school are identified, utilizing an instrument developed by the Project. Possible reasons for their dropping out are identified and remedies calculated to keep them in school and to raise their achievement level are applied.

The prevention and cure component provides for an expanded learning system which effectively links the formal, nonformal and informal education systems. This expanded learning is backstopped by comprehensive school-home-and-community-based student learning support services (SISS).

LS-EFA provides an alternative learning delivery system for students who cannot attend classes regularly or are forced to leave school before completing grade six. Those who are constrained to stay out of school for a long period of time are shifted to an alternative learning system (ALS) whose curriculum is based on essential learning culled from the formal school curriculum. They are provided printed self-learning materials and

are guided to continue learning on a distance education scheme. Their learning is accredited so that they can reenter the formal school, if they opt to do so, or they may be certified according to the formal school grade their achievement level indicates.

Significant Features of LS-EFA

Certain features of LS-EFA account for its capacity to address the varying needs of school children and enhance their learning achievement. It has a built-in early warning system (EWS) for identifying, monitoring and counseling students who are potential school leavers and who have academic and other related problems. It utilizes a validated instrument for identifying potential dropouts and students at risk. On the basis of data generated, the teacher is able to plan interventions suited to the students' unique needs.

LS-EFA adopts integrative learning, an innovative philosophy of education focused on heightening student motivation and improving the quality of learning. Integrative learning amalgamates a variety of theories and techniques not usually found in traditional methods. It is a systematic application of recent research findings in the neurosciences and the social and physical sciences. As an approach to learning, it perceives learners as whole persons who learn best when all their senses and emotions and their seven kinds of intelligence are actively involved in the learning process. The LS-EFA tryout schools achieved a measure of success in teaching students to learn how to learn by adopting integrative learning approaches.

LS-EFA adopts a multi-channel learning approach. It integrates formal, nonformal, and informal education as learning channels and harnesses a wealth of mediators of learning to enhance learning achievement, such as, technology, games, dialogue, interviews, field trips, group activities, etc.

LS-EFA utilizes three learning delivery modes, namely, classroom-based learning for regular students, a combination of classroom and home-based learning for temporary and seasonal school leavers, and a distance learning system for permanent school leavers which is condensed and adapted for fast-paced learning.

The scheme utilizes the Philippine Equivalency and Placement Test (PEPT) for accrediting learnings of students acquired outside schooling and for assigning them formal grade or year equivalency.

In-school and out-of-school learning approaches are adopted to provide various modes of teaching and learning that are appropriate to the learning styles and interests of students.

Since most of the low-learning-achievement students come from the lower socio-economic stratum of society, LS-EFA provides nonformal education programs for the students' parents. These programs provide training for parents to augment their income and other forms of support and incentives to make them more economically productive, to improve the health and nutrition of their family, to become functionally literate and thus become more capable of monitoring and assisting their children in their learning process.

LS-EFA puts strong emphasis on the development of functional literacy and thinking and problem solving skills. It employs simplified and easily understood self-learning and peer tutoring materials and technologies. These materials enable the learners, either individually or as a group, to learn at their own pace and to develop the skill of learning how to learn. Peer tutoring has been found to be advantageous to both the tutor and the tutored. The student-tutors are prepared for coaching their peers through a programmed teaching strategy which provides materials for helping the tutor to help others in facilitating their learning.

Innovative teaching techniques and comprehensive learning support services (SLSS) account for the effectiveness of LS-EFA. These support services include school-based learning support services, home-based learning support services which deeply involve parents and parent surrogates and community-based learning support services.

Difficulties Faced in Implementing the Innovation

A paradigm shift in the delivery system of education is not always welcome no matter how great its potential is for solving persistent problems, because any change in the process and content of education will entail more work on the part of the teacher and school administrator. The initial implementation of LS-EFA produced a number of "unbelievers" among the teachers and parents who thought that the project was a "here today, and gone tomorrow" thing.

The tryout school heads reported difficulties in sustaining the teacher's level of motivation and enthusiasm about the project especially its day-to-day activities. Normal resistance to change had to be addressed immediately to ensure the success of the tryout. Fast turnover exacerbated the teacher problem. New teachers had to be trained to take over from those who left, and there was not always sufficient time for such training.

While parents were sold to the idea of providing necessary support services to their children, the poverty and illiteracy of majority of them militated against providing such services. In the very depressed tryout schools, there was noncompliance with the learning contracts signed by the parents on account of either ignorance or indifference. Some parents failed to provide a regular schedule for their children for home study and work on the Teacher-Child-Parent workbooks, because they either failed to realize its importance or were too busy with the vital concerns of day-to-day living. In spite of the difficulties and other stumbling blocks encountered, LS-EFA proved to be a learning system with considerable promise of raising achievement levels of students and reducing dropout rates drastically.

Focus on Sustainability of Innovation

Right from the start of the project, sustainability of the innovation was a primary concern. As early as its conception, the problem of how to integrate the innovative learning system with the mainstream program was addressed.

Let us have a close look at one project site in which LS-EFA has been adopted in schools other than the tryout schools. Pontevedra South Elementary School is a school in one of the larger island provinces down south in the Philippines. The success of its tryout of the innovative

learning system is attributed to the able and dynamic leadership of its district supervisor who promoted three organizational values among the teachers and principal: commitment, cohesion, and competence to insure the successful tryout of the system. Inspired by the success of LS-EFA in enhancing the achievement level of students and in reducing dropout rate to zero, other schools within the district are now preparing to adopt the scheme.

Pontevedra South Elementary School used to be an unknown institution until it became a successful pilot site for LS-EFA. Its staff feels good about being noticed for having been able to enhance the learning achievement of their students and for bringing dropout rate down to zero. Its teachers now glowingly narrate to other teachers how the non-traditional approaches of integrative learning brought life to a teaching routine that bordered on monotony; how cooperative learning, thinking skills development, games and multi-channel learning approaches spiced up to day-to-day activities of the school and made their school life more interesting. They speak of how they strived to eliminate "hostility in the classroom" which could take the form of such sins of omission and commission as failing to call on students to recite or participate when they are enthusiastically raising hands, or requiring all the students to manifest mastery of a lesson uniformly through the written word although there are other effective vehicles that may be used, such as, music, drama, drawing/painting, dance/gymnastics, mime, poetry, etc. to manifest what has been learned.

The greatest contribution of LS-EFA is the significant it wrought in the attitude of the students towards learning, teachers and the school. Concomitant changes were noted in the attitudes of parents and community leaders toward the school. The school could now count on the parents and the community as part of the students' learning support system. Parents and the community now care more about what the students learn in school, and in return the students feel invigorated by their loving concern.

Pontevedra South Elementary School has set the pace for all the other schools in the district and in the whole school division (province) for enhancing learning achievement and eradicating drop outs. Its consistent climb in achievement level manifested in the yearly division, regional and national achievement tests and its having registered zero dropout in the last three years have provided the impetus for wider utilization of this alternative scheme.

Innovation for Sustainable Development

The history of innovation in education may be likened to a graveyard littered with tombstones of innovations, some of which were still born, or died prematurely, or which prospered but died a natural death after the period of experimentation. Innovations in education need not suffer such fate if appropriately nurtured during their pre- and post-experimentation stages. Nurturance your innovation, such as, LS EFA would take the form of gradual integration into the mainstream of the educational program, or grafting it to the total program so that it can be utilized in such a way that it contributes to the sustainable development of the school clientele.

This herculean task would require considerable effort, time and money for preparing the ground for the new learning system, so to speak. There will be need to retool the teachers and principals for the reinvigorated rates, develop and produce new self-learning materials, restructure the physical environment of the learners and harness the full cooperation of parents and parents

surrogates and the community. There will also be need for social advocacy of the innovative alternative for enhancing learning achievement and eliminating dropouts in order that it will merit the support of all stakeholders.

No better strategy can there be for advocating the adopting of LS EFA than making the teachers, principals, parents and the whole community to realize that students' achievement levels have improved and dropouts have been eliminated through the adoption of the innovative learning system. If effectively implemented and supported by both the school and community. The No Dropout Learning System for Education for All or LS-EFA, may become the pathways to sustainable development.

BIBLIOGRAPHY

1. Florencio, Celilia. 1988. Nutrition, Health and Other Determinants of Academic Achievement and School-Related Behaviour of Grades One to Six Pupils. Quezon City, Philippines: Center for Integrated and Development Studies, University of the Philippines.
2. Heyneman, Stephen P. and William a. Loxley, 1983. "The Effect of Primary School Quality of Academic Achievement Across Twenty-Nine High and Low Income Countries". The American Journal of Sociology 88 (6). 1162-94.
3. Lockheed, Marlaine and Adrian M. Vespoor and Associates, 1991. Improving Primary Education in Developing Countries. Washington, D.C., the World Bank, pp. 39-88.
4. Postlethwaite Neville and Ken Ross, 1992. Effective Schools in Reading. Implications for Educational Planners. The Hague, the International Association for the Evaluation of Educational Achievement, pp. 1-4.
5. SEAMEO INNOTECH. No Drops LS-EFA, A Learning System for Education for All. Quezon City, Philippines Southeast Asian Ministers of Education Organization Regional.
6. Center for Educational Innovation and Technology, 36 pp.
7. Whitaker, Patrick. 1977. Primary Schools and the Future: Celebration, Challenges and Choices. Open University Press, Backingham, Great Britain, pp. 1-51.

SCIENCE IN PRIMARY SCHOOLS AND SUSTAINABLE DEVELOPMENT: AN INNOVATION IN CAMBODIA

Supote Prasertsri

The present education system in Cambodia is characterized by a reasonably good net enrolment, but low completion rates (55%) and weak quality and relevance of what is learned in schools to the daily life, thus a high wastage is observed. In order to improve the quality of education, the Government has taken a bold step in reforming the system, the curriculum, the

textbooks, teacher training and delivery systems. Under this framework, science is being introduced to primary education for the first time in the history of Cambodian education, and is expected to contribute significantly towards a sustainable socio-economic development of the post-war era in Cambodia.

For a country which has been suffering so long, the notion of sustainable development is taken very seriously. For Cambodian people, sustainable development means the rights to sustain life and peace without being threatened by war; the rights to live in harmony with nature; the rights and responsibility to participate in development; and the rights of the future generations to enjoy what the pre-war generation used to do. Practicing Buddhism, Cambodian people have been taught for centuries to share these rights not only among themselves, but also with animals, plants, trees, and spirits which are believed to reside in the trees, mountains, stone, and rivers. Therefore, the term sustainable development has a very broad meaning under the Cambodian cultural context.

Sustainable development, as defined by development agencies, is directly related to three main issues: (1) human development, (2) maintaining bio-diversity, and (3) preventing the global warming. Science education is being reformed to meet these three challenges, not only in Cambodia, but around the globe.

Views from the Grassroots on Sustainable Development.

For most Cambodians, the highest priority in life is to sustain life and cultural identity. A life without Angkor is not Cambodian; and Angkor without human life is just a piece of stone, the non-living thing. The second priority is to sustain peace and right livelihood for all. Once peace and basic needs are maintained, then the rights to education, freedom of expression, democracy, etc. can be strengthened through education and other development measures. Ordinary people often ask themselves several basic questions:

When can we achieve the long-lasting peace after over two decades of conflicts?
When will our children can go to school without fear?
Who can help remove landmines from our fields and forests?
Will the forests and wildlife stay with us forever?
How can we stop the logging firms from robing our forests?
Why do the flood happen too frequently and more severe?
Will the Great Lake dry up some day?
Why is it so difficult to find firewood around our villages these days?
When can we have adequate rice and fish for our family?
What is the future of our children?

Two villagers, one in the forest highland areas and another in the lowland forests, shared their views on what they mean by sustainable lifestyle: "Our ancestors have taught us to protect these tall tress and tap their oil for making torches and water proof bamboo baskets for family use and the surplus for extra income all year round. This year a foreign logging firm came and mercilessly fell all our tall tress and took them away. We have no more wood oil for torches. No more light for our children to study at night. No more income from our trees. The spirits of our ancestors have now died with these trees".

In 1992, the author flew over Pailin, the gemstone mining province in western Cambodia. From the air, one could see thousands of ponds of muddy water. They looked like Moon craters with water in them! As a result of strip mining in Pailin by the Khmer Rouge and foreign firms, the soil has been badly eroded for the past ten years. This yellow water flow through a river around 100 kilometres before discharging into the Great Lake west of Angkor. The villagers along the river banks can no longer use the water for their domestic purpose, nor can the fish lay eggs and grow in such soil contaminated water. For the villagers, "the conflicts in Cambodia has killed not only people, but has also killed the fish and the Sang-ke River itself".

A group of villagers from Northern Cambodia complained that hundred of truckloads of logs are being transported to neighbouring countries each day. The natural fruits, honey, birds and all kinds of wild animals have lost their lives and their habitats rapidly. "Our natural wealth is disappearing everyday and we can no longer collect wild food from forests. In stead, land mines imported from abroad are being planted to replace those trees! Business people have killed our trees and now warriors want to kill us with mines."

Fish is the major sources of protien for Cambodians. But their natural stock and species are also disappearing rapidly as well. Some villagers have recently revived their traditional knowledge on how to raise fish in cages and in ponds. The fish in these ponds and cages, in fact, has been fed and taken of by children. This skill is very vital for sustainable food supply in the country.

Why Innovation? There are several **reasons** for the innovation. Cambodia is probably among a few countries in the world which has lost 30 per cent of her population by the longest armed conflicts during the post World War II era. The loss of educated human resources, especially teachers, was as high as 70 per cent because of the anti-intellectual "revolution" carried out by the Khmer Rouge. Until 1993, when the UN organized the general election, the war has practically prevented the education system from proper functioning, let alone being reformed. Due to the shortage of teachers and classrooms, only basic subjects--Khmer language and mathematics--were taught in schools. Science wa considered a luxury. The reform calls for a diversification in school curriculum as well as an introduction of the action-based and child-centered learning, which is quite a radical departure from rote learning. At the same time, the reformed education is also expected to bring back a durable culture of peace, to contribute to poverty alleviation, and to promote a sustainable and participatory development a sustainable use of Cambodia's natural resources.

Because of the conflicts, Cambodia presently relies heavily on commodities and products imported from abroad. To become self-sufficiency, the country will need both financial investment and human resources development in science and technology. People believes that the new science programme can effectively respond to the needs for modernization in various sectors--energy, transportation, communication, construction, trade, education and culture.

Being one of the least developed countries, Cambodia needs to lift itself up from poverty and violence to peace and prosperity. Science and technology can help improve the quality of life by upgrading food production capacity, generate income, improving health standards, add a higher

value to primary products by transforming them, improve communication and transportation, conserving the natural resources.

At the same time, the targetted teachers and pupils are expected to develop a new way of solving problems through peaceful and scientific methods and accepting positive attitudes and environmental ethics into their daily life.

How does it work? The innovation has been introduced in a manner which is quite different from the process experienced by other countries. Since there is no trained science curriculum specialists who survived the genocide, newly trained science teachers were recruited and trained to perform the double functions of curriculum cum textbook development specialist. Some of their leaders were sent on a few study tours to ASEAN countries. Foreign experts in science education and desk top publishing were brought in to conduct short course training and workshops for the team of writers, illustrators and computer operators. Luckily, the Khmer fonts and software were already developed by Cambodian experts abroad, thus facilitating significantly the desk-top manuscript process.

The role of UNESCO is to provide technical assistance for the Cambodian team in producing quality camera ready manuscripts. UNICEF provides supplementary payments for Cambodian science writers. A loan from the Asian Development Bank was secured for printing of the textbooks and teachers guides. In January 1997, textbooks for grade 1, 2, and 6 have been distributed to all children on a 1 to 1 basis for the first time in 27 years. The new books have brought a lot of excitement to pupils because they are full of illustrations and guided activities for children to play with science. In terms of contents, this is an integrated science in which grades 1-3 is related mainly to personal health and the environment while that for grade 4-6 focuses on matters, energy, life, technology, environment, population, earth and space.

Difficulties? The project has faced a number of difficulties. Among them: First, the project had to start from scratch because the lack of trained science writers in Cambodia. Secondly, the staff members received their pre-project training only in the theoretical science, not in the "hands-on" science, thus lacking practical experience. They also lack skills in research and experiments. Thirdly, the team is working in a very crowded space--30 persons in an 8 x 8 metre room! Fourthly, the staff members lack proficiency in English and French, which are languages of most reference materials. There is no reference material available in Khmer language. Fifth, the science teachers were familiar with mainly the "imported or imposed contents" and thus lacking the skills in localizing them to local situation and needs. Sixth, there are very limited funds available for training primary science teachers in the country. The recent armed conflict has further driven donors away very far from Cambodia. Over half of the national budget is taken by defense and only 9 per cent is devoted for education, the lowest in the region. The "free and fair" election planned for 1998 is expected to change the budget structure and to bring science donors back.

Results of Work. Despite difficulties and constraints, the project has achieved quite a remarkable success. At least, 40 writers, illustrators and PC operators have been trained in the book development process and a few hundred teachers trained on the child-centered and scientific approach which focus on group work, use of environment as science resources, demonstration,

hands-on experimtns, question-asking, problem-solving, and communication. Textbooks were distributed to all children and teachers on a 1: 1 basis for the first time in the past three decades. The quality of learning has improved as indicated by the rates of promotion. An awareness on the environment and a sustainable life style, if not development, has been imparted to children and teachers. Cambodia has also been re-integrated to the regional network of science education. A number of science book writers and teachers have been sent on study tours to some ASEAN countries.

What Impact? At this stage it is too early to assess the impact of the innovation on sustainable development in Cambodia. However, the innovation has heightened the level of awareness among education policy makers, administrators, science educators, and the communities on the role of science in personal, social and economic development. In fact, most children in rual Cambodia have already developed positive attitude on the sustainable use of their natural resources before attending schools. The scientific methods have reinforced what they have already known and the application to technology appears to be a new knowledge for them. The immediate effects detected after almost one year of this innovation is the improved learning achievements among school children, resulting in an increase in promotion rates and a reduction in repetition and drop-outs. Incidence of illness may have reduced as a result of learning about personal hygiene, thus contributing to a reduction in child mortality rates.

As seen in other more developed countries, the more you develop your economy and your education, consumption rises at a very much high proportion, thus affecting the quality of life and environment themselves. The real issue is how to achieve social and economic development without destroying our life-support environment. If science is not properly taught, it can lead towards social injustice and destruction of the earth surface and atmosphere.

Impact on Sustainable Development?

As mentioned earlier, the impact of the project should be evaluated against the three sustainable goals above: human development, bio-diversity, and the global warming. In this analysis, the author would like to concentrate only on the first two goals because they are directly related to the situation in Cambodia while the third goal is very difficult to evaluate at this stage.

Around 44 per cent of Cambodian households live below the poverty line. Any development activities must be directed at alleviating poverty first if sustainability is to be maintained. Education is a major tool for poverty alleviation and this tool must be used simultaneously with other measures, especially the national and regional policy on sustainable development and sustainable use of natural resources. With regard to the sustainable use of life-support natural resources, the most difficult task is not in educating the children, but in creating awareness among political leaders and unscrupulous businessmen, mostly from other Asian countries, who hold absolute power to exploit forests, gemstones, minerals, fishery, land and other resources without taking into consideration the concepts and practices of sustainable development and the rights and needs of the people and future generations. Data from recent socio-economic surveys indicate that the household income has been improved and Cambodia has become self-sufficient in food supply, but we do not think it is the impact of our project.

To be effective, we adults must serve as a role model on sustainable development for children. Do we practice what we preach? We should stop buying houses which are made of wood from natural forests. We should walk and use bicycle instead of cars or motorcycles to keep the air clean. The rich should not buy gemstone excavated from strip mining and where the income is used for war. Take children to watch birds, wildlife, and fish under water so they can learn and appreciate our beautiful world. For dinosaurs, we can only see their bones. They became extinct 65 million years ago, and they still have not returned to meet a new member like us--Homo sapiens--which is only one million years old!

Environmental education can be integrated not only to science, but also with other subjects taught in schools: language, literature, moral and civics, mathematics, and sports (swimming in a clean lake, for example.)

Regional co-operation in adopting the sustainable development policy and practices are, therefore, crucial for regional development and survival. The case of Indonesian haze created by man-made fire for large scale plantation this year is a case in point. If the deforestation is not stopped, the future haze is likely to come from all directions in Asia. Pollution is the second major issue because it can spread across rivers, oceans and atmosphere. Many "tiger" countries are rapidly following the foot steps of the industrialized countries in the rates of consumption and pollution. It is time for resource-rich developing countries to set a model in development: sustainable development with equity and without depletion and pollution.

Data on school enrolment, school achievement, and changes in the quality of life is now available for monitoring the changes and possibly their inter-relationships in human communities. But the data on environment and bio-diversity is still weak even though technology is available through satellite and other methods. It is, therefore, still difficult to ascertain the impact of the project on these changes at this time. It might be possible to analyze this the next few years under a comprehensive evaluation of education and development. But recent satellite images have shown an alarming trend of bio-diversity depletion already. Environmental education for children cannot stop adults from destroying this. Rich countries which are currently importing timber can also help stop the depletion by reducing their consumption there.

That we are responsible for correcting the present crisis and shaping the minds of children for sustainable future simultaneously is quite a great challenge. Those who will be in a position to act on the concepts and practices of sustainable development in the 21st Century is our current primary school children. We may not be alive to evaluate their action, but they will definitely assess our present performance and morality.

CHAPTER SEVEN

KEYNOTE ADDRESS AND CONFERENCE SUMMATION

PROFESSOR PHILLIP HUGHES, UNESCO RESEARCH FELLOW,

AUSTRALIAN NATIONAL UNIVERSITY UNESCO CENTRE

CONFERENCE SUMMATION: EDUCATIONAL INNOVATION
FOR SUSTAINABLE DEVELOPMENT.

Phillip Hughes

A TIME TO HEAL.

1) A Time to Speak

There is one section of the collection of poems in the book of Ecclesiastes which stresses the importance of the timing of our actions and choices.

"To everything there is a season, and a time to every purpose under the heaven:

a time to be born, and a time to die;
a time to plant, and a time to pluck up that which is planted;
a time to kill, and a time to heal;
a time to break down, and a time to build up;
a time to weep, and a time to laugh;
a time to mourn, and a time to dance;
a time to keep silence and a time to speak.

Ecclesiastes. 3. 1-4

We are reaching now a crucial time for choices. It is just 35 years since Rachel Carson wrote her seminal book, 'Silent Spring', in which she foresaw our misuse of technology bringing a time of devastation, when there were no birds left alive to sing, in a ravaged landscape. Then, her idea was novel and shocking. Now we see that idea as presenting a truth which we cannot ignore. We are told, there is nothing so powerful as an idea whose time has come. In this conference, at this time, the response to Rachel Carson's thinking has emerged as 'sustainable development' and we consider a vital question. How can we achieve it?

The APEID Project, Learning for a Sustainable Environment, begins with a striking quotation:

"The crisis of sustainability, the fit between humanity and its habitat, is manifest in varying ways and degrees everywhere on earth. It is not only a permanent feature on the public agenda; for all practical purposes it is the agenda. No other issue of politics, economics and public policy will remain unaffected by the crisis of resources, population, climate change, species extinction, acid rain, deforestation, ozone depletion, and soil loss. Sustainability is about the terms and conditions of human survival, and yet we still educate at all levels as if no such crisis existed."

Orr, 1992

Those words are apt for us, here, as we think over the presentations and discussions in which we have been involved. The crisis of sustainability is our agenda. It will be fulfilled by our discussions, our decisions and the sincerity of our commitment. The paper by Yodmani stresses the importance of sustainable development as an issue for Asia and the Pacific. In this diverse area, with 23 per cent of world's land area, we have 63 per cent of world population and 68 per cent of the world's people living below the poverty line. In this area, also, we have many of the world's environmental challenges, the rural reefs, the mangroves, the islands threatened by rising sea levels, the degradation of the soil. (Yodmani, 1997)

Encouragingly, the discussion here shows a common understanding of the issue, accepting the Bruntland definition of sustainable development as development that meets current needs, but without mortgaging the rights of future generations, without diminishing their opportunities. The term is also seen as a practical concept, as a style of development planned so that it can be sustained through local resources. While sustainable development is an attempt to cope with crisis conditions in a number of areas, there is essentially, as quoted in the paper by Charles Hopkins, one crisis. "Until recently, the planet was a large world in which human activities and their effects were neatly compartmentalized within nations ----- and within broad areas of separate concern (environmental, economic, social). These compartments have begun to dissolve. This applies in particular to the various global "crises" that have seized public concern. These are not separate crises : an environmental crisis, a development crisis, an energy crisis, an economic crisis. They are all one."

Hopkins, 1997

The very existence of this conference, but even more the nature and consistency of the viewpoints and information shared here show one thing clearly. An issue which was once the concern of a few, has now become a focus of concern for international bodies, for governments and, especially, for ordinary people. It is not whether the crisis exists that is our concern, we know the crisis exists. It is on what steps to take, that our attention focuses. We have heard enough from the gatherings at such places as Tbilisi and Rio to be concerned that our planet is in danger of drastic and irreversible harm. It is a time to commit ourselves - not to a slogan, but to the harsh reality involved in facing and resolving problems. As the UNEP paper says: "The challenges we face have been caused by human action. They will be solved by humans." (Yodmani, 1997).

Our first reason for being here, is to speak. It is a time to speak, to speak clearly of the challenge of meeting change and retaining important human values. Two other meetings are taking place at the same time. In Japan, the countries are discussing global warming and the need to control fossil fuel emissions. In Malaysia, the countries discuss the economic future of the region. In neither place is it clear that the countries will speak with a common voice, to insist on development that is economically and socially sustainable. It is important as we speak that we do so with a common voice and one which leads us to action. Right from the opening session, we were encouraged by

Princess Maha Chakri and the Director-General, that our words must result in practical outcomes. Victor Ordonez spoke of our words as a promise which we make to others, not just to speak, but a promise to plan, a promise to put into action, a promise to build.

2) A Time to Build Up

Orr's words in 1992 were: 'we still educate at all levels, as if no such crisis existed.' This is true to a degree, but we recognize that fundamental changes have occurred, affecting our patterns of work, forever. Jomtien, the World Conference on Education for All, held in 1990 was a turning point in our will to act.

Jomtien was powerful because it explicitly recognizes the nature of the problem and the nature of the solution. The World Conference was appropriately named, for it linked together four powerful global agencies: UNESCO, UNDP, UNICEF and the World Bank. The message is clear: this is a global issue and we need to seek global solutions. As Charles Handy pointed out recently, there are more than 70 supranational corporations, each of them with a budget larger than a medium-sized nation such as Cuba, and none of them having any responsibility for the style of their development, other than to make a profit. (Handy, 1997) Individual governments have no means of guaranteeing control, unless they combine together or act through existing international organizations.

Jomtien is also powerful because it specifies not only the nature of the problem but also the nature of the solution. Their analysis identified the concept of 'convergence of disadvantage', to describe the clustering together of the factors which disadvantage the poor and then suggested a means of resolution.

"These needs comprise both essential learning tools (such as literacy, oral expression, numeracy and problem-solving) and the basic learning content (such as knowledge, skills, values and attitudes) required by human beings to be able to survive, to develop their full capacities, to live and work in dignity, to participate fully in development, to improve the quality of their lives, to make informed decisions, and to continue learning."

Jomtien, 1990.

To the impetus given by Jomtien, UNESCO has added a specifically educational thrust in the Report of the International Commission on Education for the Twenty-First Century, called the Delors Report.

"The accelerated pace of population growth, the wastage of natural resources, environmental damage, the chronic poverty of much of the world, and the oppression, violence and injustice from which millions still suffer, all call for large-scale remedial action that can be implemented only by reinvigorating international co-operation and putting more resources into it."

Delors, 1996.

Delors is important not so much for the specificity of its suggestions but for its explicit broadening of the agenda for education. To the agenda of formal education, and the familiar requirements of 'learning to know' and 'learning to do', two additional aims are added. 'Learning to live together' can be seen as a statement which comprehends 'learning for sustainable development.' At its most complete, it includes our capacity as human beings to create a harmonious society but also our capacity to include in that harmony, all of life, all of the creation of which we are a part. The additional aim, 'learning to be' states the dignity and worth of the person, but in the context of a harmonious community.

What is most encouraging about our meeting here is the clear evidence of initiatives at the community level, to give expression to the high purposes of Jomtien, and, increasingly, this will happen with Delors.

Perera deals with the efforts in Sri Lanka towards poverty eradication. "There is one over-riding consideration. The poor cannot wait. They have virtually only today"

Perera, 1997.

He points out that too many education programmes have not been useful, because they have led to no actions relevant to the key needs of the learners. He describes the comprehensive, integrated approach of the Sarvodaya Sangamaya which aims to link social, political and economic development with cultural, moral and spiritual development. Similarly, Bapat, writing of India, describes the work of the J.P. Naik Centre for the Development of Rural Women, which stresses the need for interconnection between 10 different fields for action in order to achieve worthwhile results.

Anthony Hewitt of UNICEF spoke of two villages, one in Thailand one in Laos, both faced with problems which seemed endemic, causing both individual distress and community disruption. Both found answers from within their own resources, by reflection, by analysis, by assessment, through to deliberate action.

Charles Hopkins spoke of a large city, taking on the task of assessing its needs, defining common purposes, agreeing on processes and proceeding to solutions.

Three sets of local solutions. At the other end of the scale, New Zealand, Thailand and Korea spoke of major system reconstructions or re-engineering. Fundamental reform of purpose and processes, as well as structures.

These major reforms raise fundamental questions about the balance between centralization and decentralization and whether whole-scale change in one direction is justified by any research. It also points out the value of careful evaluation for large-scale educational intervention, of the kind we customarily expect for smaller-scale operations.

This has not only been a time to speak of needs, but to undertake to a quite unprecedented extent, reforms, restructuring, renewal, re-engineering. In our time, we are seeing much more comprehensive approaches to educational innovations than ever before, often in the name of sustainable development. We have not been content just to speak, but we have identified the time to do, to build.

How sure can we be, that we are building on sound foundations?

One aspect is clear. Acting as individuals, as single institutions, even as separate countries we can not succeed in building for the long term. Learning from each other, working with such other, : these are necessities in our global society. This conference provides us with a model. We see the linking together of great international organizations: UNEP, UNICEF, UNESCO, UNDP, the World Bank. We see the network that is APEID providing a link between our separate efforts, a link that is being rebuilt and extended from the lessons of 24 years. There is a strength here that we all need - if we are to build sustainably, not only for the present but for the future.

3. A Time to Dance

We have made the most of our time to speak. We have begun to enlarge the opportunity of our time to build up. Still we recognize the dimensions of the problem as being formidable. It took many thousands of years of human history before our world population reached 1 billion, only another 120 years to double, to 2 billion and in less than 50 years the population has grown to 6 billion. Urban population green from 30 billion in 1800 to an estimated 2.8 billion currently. To reach these people, even in the sense of Basic Education for All, is an immense task, and one that is growing daily. Our efforts have grown over recent years and, as so many papers at this conference demonstrate, they are becoming more effective. Still, as the earlier quote indicated, "the poor have only today." Many people can't afford to wait. Their chances of a better life depend on what is available now. To break these limitations will call for something more.

The importance of this is underlined in the paper by Heyn and others, on behalf of UNEP. The paper points out that for achievements of different kinds, different educational threshold levels apply, from 4-6 years for basic literacy, ranging up to 10-12 years for industrial productivity. In addition to this, the experience of industrialized countries indicate that even where these levels are available, sizeable sections of an age group do not succeed in them.

Our conference already has stressed the value of what is being done and it is clear from the many stories that we have learned, and are applying, valuable lessons. Our early literacy programmes failed because we did not provide follow-up literature. Some of our science education programme, so hopefully implemented, have not continued because the conditions prevented the use of the science equipment. We have learned from this. The Thai village and the Laotian village, of which Anthony Hewitt spoke, show us useful

ways to act, enlisting the community as both learner and teacher. Ventures such as the Grameen Bank, beginning in Bangladesh, have taught us to mobilize the creativity that is inherent in every human community. The Paper on Health Education in Nepal by Allison Lane Smith identifies a model which works well in rural Nepal and offers models for elsewhere. (Smith, 1997)

The list of what we can accept as key priorities is helpful in guiding our efforts and our resources.

- basic education for all;
- life-long learning;
- The central role of the teacher;
- the capacity of women;
- the learning strength of the community;
- the enlarging effect of educational technology.

Yet, simply to depend on the best we can do, currently, will not be enough. Time and opportunity run out quickly for many millions of people.

Can we look forward to success?

Not if we continue on with more of the same. Helpful as this is for many people it cannot provide for all.

We are called on, not simply to speak out, not simply to build up, on present models of thinking, but to show creativity and imagination in ways that have not yet been thought of.

It is a time to dance, to use all our skills and learnings, our self-discipline, our power to co-operate and to make new patterns, new combinations. The Indian mystic Sri Aurobindo wrote. "How marvelous is our creation, of bodies moving in endless space. Yet more wonderful by far is the power of human creativity." Can we enlist the ingenuity which created the Pyramids, constructed Macchu Picchu, brought Angkor Wat into existence, built Chartres Cathedral, sent people into space to view Earth from outside for the first time?

We must have faith in the limitless capacity of the human mind and spirit to be creative, to move beyond seemingly unclimbable barriers and open up new horizons of possibility.

We see many evidences of this creativity, here.

Creativity, plus a deep sense of our responsibility to one another. . Mahatma Gandhi, travelling on a train on one occasion, wrote in a letter to UNESCO.

"I learnt from my illiterate but wise mother that all rights to be deserved and preserved come from duty well done. Thus, the very right to live accrues to us only when we do the duty of citizenship of the world."

Taken separately, each contribution made here is relatively small, in face of the enormous challenge. Taken together, the words, the ideas, the experiments, the relationships, begin to add up to something formidable and constructive.

It would be easy for us to mourn, to weep with frustration at the lost opportunities and the waste of human life. We are asked to do something more - to celebrate the richness and diversity of human talent and called it into play. All the discipline of the dance is called for - all the creativity of the dancer is needed. If we view this conference as an isolated occasion, it will lead nowhere. We must take it as one large step into the future, establishing what we know and can do. We must take it, also as an opportunity to work together, to create new approaches, to develop new concepts, to implement new processes. We could lose our souls in mourning what we have not done. Instead, we are asked to celebrate, to invent, to move forward - to dance.

We have chosen not to be silent

- but to speak.

We have chosen not to break down

- but to build up.

We have chosen not to mourn

- but to dance.

We have chosen not to kill

- but to heal.

Handy, Charles. 1997. *The Hungry Spirit*. Hutchinson. London.

Heyn, Michael. (UNEP) 1997. *Economic Issues and Considerations*, ACEID, Bangkok.

Hopkins, Charles 1997 *Educational Innovation for Economically Sustainable Development*, ACEID, Bangkok.

Jomtien, 1990. *World Conference on Education for All*, UNICEF, New York.

Orr, D. 1992. *Ecological literacy : Education and the Transition to a Post-Modern World*. SUNY Press, Albany.

Perera, D.A., 1997. *Literacy, Basic Education and Poverty Eradication*, ACEID, Bangkok.

Smith, Allison Lane. *Health Education and Adult Literacy: Teaching Rural Women in Nepal*. World Education. Boston.

Yodmani, Suvit. 1997 *Environmental Issues and Considerations*. ACEID, Bangkok.

CHAPTER EIGHT

PAPER ABSTRACTS

PREFACE

The Paper Abstracts contained here were submitted before the Conference and comprise the basis for the papers given at the Concurrent Paper Session of the Conference. Anyone interested in obtaining the papers presented should contact the author. The names of the authors who actually attended the Conference and presented papers appears in the List of Participants.

- Abid-Babano, Hadja Estrella. (Department of Education, Culture and Sports, Philippines)

Multigrade Classes and Accessibility to Schooling

The Philippines is composed of 16 Regions with a population of 68,349,452 people. The land area is 300,000 square kilometers. Spread throughout the country are 44,090 public elementary and secondary schools with a total enrolment of 18,929,077. There are 423,998 teachers assigned to teach in the schools. One of the regions is Region XII found in Central Mindanao in the Southern Philippines. Region XII has a total enrolment of 610,647 with a teaching staff of 15,041 for both the elementary and secondary schools. In the public schools alone, there are 1,077 complete elementary schools and 49 incomplete elementary schools.

The incomplete elementary schools are located in remote areas where the population is sparse. The problem of completing these schools prompted the Department of Education, Culture and Sports to organize multigrade classes that put together two or more grades in one classroom under one teacher, in order to provide for the promotion of pupils to the next grade level in the same school. This makes education more accessible to people in these areas. The multigrade scheme likewise solves the problem of teacher and school building inadequacy in the region. The multigrade class requires special teacher preparation with regard to daily lesson plans, instructional materials, classroom arrangement and timetabling. Managing classes requires attention to be paid to recitation, seat work and testing and evaluation. Multigrade classes also require specific strategies for the grouping of pupils, structuring their learning experiences and group cooperation. This paper identifies with the differences made through the introduction of this programme.

- Achava-Amrung, Pornchulee. (Chulalongkorn University, Thailand)

An Analysis of Judgmental Reasoning of the Thai People

The purpose of this research is to conduct a content analysis of documents and related literature on rational thinking focused on problem-solving, to serve as a basis in constructing an interview schedule as an instrument in identifying judgmental thinking patterns of the Thais. Data were collected by verbal protocol of 12 typical cases, encompassing farmers; industrialists; students; teachers; media personnel; civil servants; businessmen; politicians; laborers; housewives; armed services personnels and monks/priests. The thinking patterns of the 12 types were compared. The findings were analysed and synthesized leading to conclusions regarding the thinking culture of the Thais.

A framework of 9 categories evolved derived from documentary scanning, namely, definitions and theories on thinking; critical thinking; Thai theories and principles on thinking; theories on judgmental thinking; Buddhist thinking; Thai research on thinking; rational judgmental thinking; theories and research findings; and research methodology used-verbal protocol, narrative analysis and syllogistic analysis.

Kohlberg's Interview Schedule on Moral Reasoning was used as the basis for a verbal protocol with 12 typical cases from six geographical regions covering the whole kingdom by simple random coupled with purposeful sampling technique, resulting in 72 cases altogether.

The results from narrative and syllogistic analysis revealed the following highlights. Judgmental reasoning thinking patterns of the Thais differ between the professions under study both in kind and in degree. As a profile, the Thai people use a critical thinking pattern of the categorical kind most frequently, whereas, the procedural applied thinking pattern was the least used. Concepts of traditional Thai culture as assumptions for judgments were called upon most by farmers, stressing socially-oriented thinking patterns. The businessmen and the industrialists possess similar thinking patterns, that is, effectual diagnostic. In general, Thais portrayed very little the reflective thinking pattern. Results from the syllogistic analysis laid bare the following main kinds of judgmental fallacies: double standards, irrelevant criteria, overgeneralizing, stereotyping, hasty conclusions, assumptions, failure to make distinctions, and oversimplifying.

Understanding the pattern of thinking of the Thai people should beneficially serve as the basis for educational reform at all levels with a purpose of instilling awareness of factors prerequisite to sustainable development, i.e. ecology, equal treatment of the disadvantaged and the like.

- Agarano, Julio. (Department of Education, Culture and Sports, Philippines)

The Ladderized Agricultural Technology Education Programme in a Philippine Setting

The Diploma in Agricultural Technology leading to a Bachelor in Agricultural Technology, or DAT-BAT for brevity, is a 4-year ladderized programme which purpose is to re-orient agriculture education services at the provincial and regional levels to meet better the agricultural development needs of rural communities. It re-orient, trains, and develops highly motivated people to meet the demand for basic and middle-level knowledge skills essential to sustained economic growth and development through improved agriculture education.

The network of Regional Colleges of Agriculture or RCAs and Provincial Technical Institutes of Agriculture (PTIA) that are being established to deliver effectively this ladder-type course are outfitted with additional educational facilities, equipment, and supplies. Reinforcement likewise includes technical assistance, curriculum development, and institutional support. Concerned faculty and staff have also been trained in an experiential manner effectively to carry out same among the students as well as the farmers. The Course utilizes improved locally relevant curricula and course materials that develop the skills, attitudes, and knowledge of students to capacitate them to increase agricultural productivity and rural incomes and/or gain productive employment in local agribusiness enterprises. The curriculum likewise underscores gender equity and environmental protection. To make learning more relevant, meaningful, and sustainable, instruction is carried out in a student-centered or experiential learning methodology. Students are engaged in practicum activities and micro-projects to gain entrepreneurial skills. Through the Community Outreach Center, the research and extension arm of the course, students are provided with market and marketing data vital to their preparation of feasibility studies. This approach likewise guarantees that what the PTIA introduce as innovations or interventions are consistent with the development initiatives in the area and are relevant to the needs of the communities concerned.

- Aguilar, Helmar. (Aklan State College of Agriculture, Philippines)

The Revised DAT-BAT Curriculum for Rural Development

The DAT-BAT (Diploma in Agricultural Technology - Bachelor in Agricultural Technology) is a revised ladderized curriculum offered by the Aklan State College of Agriculture. The first two years (DAT) are designed to develop the students' basic agricultural skills. The DAT graduates may then opt to continue for another two years toward the BAT degree. In the second rung of the ladder, the students' knowledge of the "whys" and "hows" of production is strengthened. They are trained in decision making and management of an agricultural enterprise. The DAT-BAT curriculum, a regular college programme, which was designed under the bilateral agreement between the Philippine government and the Asian Development Bank envisioned to develop the entrepreneurial experience among students. However, after the gestation period of the programme, it was observed that its weakest component is the employment scheme for the graduates. Many of the graduates did not go back to the farm to be self-employed and practice the production, managerial and entrepreneurial skills and techniques learned. Instead, they sought employment in other fields of work in the cities and other urban areas. Because of this deficiency in the over-all curricular plan, an alternative concept was implemented to benefit the students in the rural areas. Thus, the Revised DAT-BAT barangay-based, project-oriented curriculum was offered in the barangay level.

The offering of the Revised DAT-BAT programme at the doorstep of the students in Barangay Sibalew, Banga, Aklan, Philippines is an innovation to the original DAT-BAT programme being offered in the main campuses and in many ATEP participating state colleges and universities in the Philippines. The advantages and the distinctive features of the DAT-BAT curriculum in Sibalew are discussed in this paper.

- Alam, Mahbub-Ul. (University of North Bengal, India)

Educational Innovation for Sustainable Development : An Indian Experience

India has the largest educational system in the world. Despite this, the highest number of illiterates (439.78 million) of the world is living in India. In order to eradicate illiteracy, the Government of India launched the National Literacy Mission (NLM) in May, 1988 with the aim to impart functional literacy to 100 million illiterates in the 15-35 years age group by 1997. An effective campaign approach has been adopted to achieve the goal, centring around the Zilla Saksharata Samities (District Literacy Committees). Out of the total 520 districts of the country, about 368 districts have been covered under the Total Literacy Campaigns (TLC). 169 districts are currently implementing the Post Literacy Programmes (PLP). In brief, this is the State of the Indian national level effort on eradication of illiteracy within a definite time-frame.

In 1993, the Centre for Adult and Continuing Education of the University of North Bengal organized an experimental TLC in the four villages of the northern three districts of West Bengal in order to find out the problems and constraints. Major experiences obtained from this study are:

- i. The required number of educated Volunteer Instructors was not available in the villages studied. Therefore, a large number of sub-standard Volunteers were entrusted with the teaching programme but their performances were not up to the mark.
- ii. Motivating the learners appeared to be a difficult task because literacy activities did not provide direct economic benefit.
- iii. Because of the subjugation of women in the family set-up, they found it difficult to come for instruction regularly. Lack of encouragement from their men folk was the direct cause.
- iv. It was observed that children (age group 9-14 years) constituted the major bulk of the population among the learners.
- v. Cases of drop-outs were found among both learners and volunteers.
- vi. Many educated youths were found to be unconcerned and callous to the literacy activities of the programme.

This evaluation more or less conforms to the findings of the national level evaluation of the NLM. It has been found that the main obstacles to a successful completion of this programme are ignorance and poverty. Human resources development are at the heart of a sustainable development of this programme. It is therefore necessary to adopt a coordinated programme to impact functional literacy to the illiterate and poor people. Motivating the people through a sustained effort is the key to success.

- Aquino, Veronica F. (Commission on Higher Education, Philippines)

Information Technology Educational Innovations in Higher Education Institutions for Sustainable Development: Philippines Experience (Region 1)

This paper is premised on the significant role of Information Technology as an instrument in mobilizing all possible resources in creating effective learning environments in academia. As we prepare for the third millenium, our focus must be on improving what we are already doing well and on correcting where there has been a decline in quality. We must address this need with the utmost urgency and concern, because education is our one comparative advantage in the race for sustainable development. Given these premises, the following are the objectives of this paper:

- 1) to analyse trends in computer science education and information technology with special focus on the Region 1, Philippine's experience;
- 2) to identify the forces that affect the development of Information Technology for sustainable growth and development;
- 3) to specify the possibilities which the Commission on Higher Education may explore to enhance the capacities of information technology educators in Region 1;
- 4) To trace the developmental path of information technology and its impact in academia; and
- 5) to present areas for greater collaboration or linkage between academe and the industry-business on information technology for sustainable development.

This paper also discusses the areas for evaluation of academic programmes as reflected in a study of the status of computer science education in Region 1, Philippines. In order to promote and strengthen the curricular activities of information technology educators in the tertiary level, some strategies that are recommended in this paper are to develop stronger linkages/networks with business/industry, create a research fund and research grants, promote scholarship in the field of information technology, establish a research council on information technology, and build information technology research and communications networks for international relations. In conclusion, this paper, focuses on quality assurance for

information technology education, using the Region 1, Philippine experience as an example for further development for national and international collaboration.

- Asghar, Anila and Irfan Muzaffar. (Ali Institute of Education, Pakistan)

A Model for the Professional Development of Rural Primary Teachers in Pakistan

The dream of quality basic education remains far from being realized for the rural masses of Pakistan with untold implications for development and growth. One of the critical bottlenecks identified in this process has been lack of opportunities for the professional development of primary teachers in the rural areas. Experience suggests that meaningful change in education is possible through sustained professional interaction and support to the teachers.

The concept of sustainable and accessible professional development centers for the rural primary teachers was developed at the Ali Institute of Education and is being implemented in ten districts of the Punjab province. These Training and Resource Centers are in the process of becoming. The process has, and continues to, bring together teachers within the districts to share their experiences, discuss professional issues and think of ways to solve them. This experience seems to have initiated a professional culture among the rural teachers in Pakistan. The stories of teachers involved reveal the exciting details of this transformative process. The issues of gender and development are also brought into sharp focus in a process that involves overwhelming majority of female teachers being empowered, as they attempt to fulfill their roles as master teachers. This paper is an account of the experiences of master teachers engaged in the process of creating these professional development centers at the grass roots level. These accounts forcefully demand a reconsideration of many myths about the quest for rural areas for quality education.

- Atkins, Susan Joyce. (Zoological Parks and Gardens Board, Australia)

Wildlife, Technologies and Children - A Combination for Disaster or Innovation for the Future

Children and television, it is often said, should never be mixed. However, if environmental education is to facilitate conservation action, and is really concerned with developing awareness, knowledge, skills, values and actions in relation to the environment, then television programming, (embracing rather than shying away from new technologies) can be an efficient and dynamic way to do so. New technologies provide the media with the means of demonstrating, sharing and discussing ecological sustainability issues, causes and solutions. They can be applied to curriculum programmes for students and professional development for teachers. This paper presents two models for the use of these media to support in-situ environmental

education action. It will demonstrate the success of these models in southeastern Australia and in the development of an innovative communication and support programme between that part of the world and Southeast Asia. It will argue that our thinking in relation to technology is often constrained by economics and speculation about levels of development and a concern with advancement being in hierarchical steps. Furthermore, it is often held that decisions and actions need to be led by professionals and adults. However, these models will demonstrate that communication and adoption of educational methodologies in developing nations, need not follow the same evolutionary path that has been forged in the developed nations. Nor should support and communication between regions, and developing and developed nations be constrained by the notion of needing to crawl before one can walk. More directly, following the way of the West, interactive satellite television, videoconferences, e-mail, the Internet and innovation can turn the slogan of 'think globally act locally' on its head. We are living in a period where innovation for ecological sustainable development is essential - locally and globally, and thinking and acting must occur concurrently globally and locally.

- Badarch, Dendeviin. (Mongolian Technical University, Mongolia)

Reform in Higher Education for Sustainable Development in Mongolia

This paper addresses the main issues in the reform of higher education for sustainable development of Mongolia, into next century. The elaboration of a national strategy for sustainable development, in line with the Earth Declaration and Agenda 21, is well under way in our country and various organizations and sectors are joining together in developing and implementing the Mongolian Action Programme for the 21st Century. Sustainable development for Mongolia in the 21st Century will be fulfilled depending on the innovation of the education system of the country, especially, in the reform of higher education. The introduction to this paper is followed by a brief description of major economic and social changes in recent years, since the beginning of democratic changes in Mongolia, i.e., the changes occurring in transition to a market related society. The changes in the higher education sector are discussed separately in the third section. The key issues of the reform of higher education in Mongolia that are likely to affect the innovation of whole education system and, finally, would effect to the sustainable development into the 21st Century are listed in the last section. The conclusion of this paper is devoted to general comments concerned with higher education demands of economic and social challenges which would play a key contribution in the implementation of the Mongolian Action Plan (MAP-21) for the 21st Century enabling sustainable development of this nation into the future.

- Bahrainy, Hossein. (University of Tehran, Islamic Republic of Iran)

Environmental Education as a Basis for the New Paradigm of Sustainability

The extensive technological advances of mankind without due knowledge and attention being paid to the natural laws and principles may be considered as the main source of present environmental problems. Therefore, promoting environmental knowledge and enhancing public awareness seem to be the most urgent goals in environmental protection. Environmental education implies a new way of thinking through which man can live in harmony with nature. In such a system, values, feelings, personal and professional responsibilities, and even peoples' behavior patterns, which will eventually all merge in social action must be realized in harmony with natural processes. One of the most essential sectors of environmental education is education at the higher level. The role of this sector includes training needed specialists, extension of knowledge, promotion of research, and provision of proper setting for societal development. Environmental education is rather new in most developing countries. Its role, however, is much more critical in these countries today than in the developed world. This article intends, following a brief review of the history of higher education in environmental fields in Iran, to elaborate on the philosophy, purpose, and content of the newly established Graduate Faculty of Environment at the University of Tehran, which, I believe, was shaped in response to an urgent need for a new paradigm of sustainability in the country. There are some lessons to be learned from this experience by other developing countries.

- Bannakeit, Panvipa. (Misson College, Thailand)

The Use of Life Skills for Development of Student Mental Health

The student mental health crisis has been increasingly noted including drug abuses, alcoholism, smoking, sexual ailments leading to HIV/AIDS, which in turn leads to problems of personality adjustment and social survival. Failure to adjust often brings about drop-outs and stop-outs, and other academic failures. These student problems are of concern in colleges and universities and preventive measures are being taken in many areas of higher education.

Life skill training is believed to alleviate the mental health crisis. It is, therefore, the objective of this research to observe students using such training. Experimental and control groups comprise students enrolled in an undergraduate course of "Method of Study", which is designed to assist students in providing learning and problem-solving strategies. Coping with life crises will be included in the training of the experimental group as treatments. Results of the study will lay bare factors contributing to the reduction of mental crises. A proposed model of life skill training as a technique in student health development will be offered. Human resource development is a mainstay of sustainable development. Life skill training is

a means of developing students to their fullest potentiality. It is life-long and contributes to their success both in college and in life.

- Barker, Miles Anthony. (University of Waikato, New Zealand)

"Unless Someone Tells Me What They Mean ..." - New Zealand Teachers Discuss their Personal Definitions of Environmental Education

This paper describes nationwide responses to New Zealand's most comprehensive national initiative in environmental education to date - the Ministry for the Environment's 1996 discussion document "Learning to Care for our Environment: Perspectives on Environmental Education". A key aspect on which the document invited comment was a proposed definition for 'environmental education'. How does this initiative at national level compare with developments in New Zealand schools? Does environmental education, in fact, exist as an identifiable enterprise in New Zealand classrooms? Are teachers' practices and beliefs evolving and coalescing towards a generally agreed working definition of 'environmental education', or is there confusion about definitions, methods and purposes? This paper documents interviews with 16 primary and secondary New Zealand school teachers who were asked about their personal definitions of 'environmental education', their strengths and needs in this area, and the implementation of environmental education. It suggests that although many of these teachers were committed to, and enthusiastic about, their teaching activities in what they considered to be environmental education, they struggled to articulate a definition for 'environmental education'. They often focused more on the 'environmental' rather than the 'education' aspects; they introduced and discussed alternative terms ('environmentalism', 'environmental studies', 'outdoor education'); and their approach was substantially influenced by their subject subculture (geography, biology, etc.). The paper concludes with some observations about ways by which interactions at the national and the classroom levels in environmental education can be promoted in New Zealand.

- Baumgart, Neil. (University of Western Sydney, Nepean, Australia)

An Innovation in Doctoral Study in Education

The traditional PhD was long regarded as the pinnacle qualification for postgraduate work in the field of education. In recent years, however, the professional doctorate (an EdD) has been regarded as an alternative qualification appropriate for educational leaders wishing to balance their training between research and applied studies. Although the form of the EdD has varied across countries and across universities, the typical format involves a mix of coursework and a thesis with the latter often focused on problems requiring practical solutions in educational workplaces. The University of Western Sydney, Nepean has devised an innovative

professional doctorate in education with student outcomes collected in a portfolio of articles, reports and papers rather than in a thesis. The basic requirement is that the portfolio comprise at least six pieces of work, four of which need to be published, and an overarching statement which explains how the contributions fit together within a coherent focus area. The portfolio is examined in a way similar to a thesis. The doctoral programme, comprising a series of meetings, seminars and conferences, is designed to provide an environment supportive of the research of the candidates, conducive to interdisciplinary work, and providing regular feedback to participants. One live-in conference each year is organized by the University as an obligatory part of the programme and regular electronic communication among students is fostered. Where feasible, research on workplace issues is encouraged and co-supervision from the workplace environment is facilitated. This educational innovation in doctoral education is highly flexible across geographic boundaries and academic fields and warrants its claim to provide sustainable development for tomorrow's educational leaders.

- Benson, Clifford James. (The University of the South Pacific, Fiji)

Developing Low Cost Local Literacy Resource Materials for Sustainable Development

The purposes of the paper are to provide further evidence of the value of story books and posters as resources which promote basic literacy and language development, and to outline a *Waka* Series project of the Institute of Education of the University of the South Pacific which is meeting the need for low cost and locally-relevant literacy resources.

Elley and Mangubhai's (1981) Book Flood was carried out in Fiji and has subsequently been internationally recognized as a crucial study to show the language learning and other benefits accruing from the provision of high interest reading materials for basic education. Recent testing of basic literacy and numeracy (Pacific Islands Literacy Level or PILL tests) carried out under the auspices of the UNDP-UNESCO-AusAID-UNICEF Basic Education and Life Skills (BELS) Programme in 11 Pacific island countries has again underlined that the presence or absence of story books is a significant factor in affecting literacy achievement. The paper will report on a (1997) study of a group of schools which has indicated this factor as significant.

To address the need for low cost resources, the Institute of Education of the University of the South Pacific is developing a 'Waka' series of story books and posters. The paper will draw out issues and principles pertinent to this project, which while being largely successful, also faces constraints from which useful lessons can be derived for future such development. The underlying theme of the paper is that basic literacy, which is developed through exposure to first language materials and/or materials in English which seek to teach language skills and reinforce indigenous

cultures at the same time, provides a sound foundation for sustainable human resource development.

- Biyaem, Suda. (Ministry of Education, Thailand)

Learner Training : Changing Roles for a Changing World

According to globalization and the growth of communication and information technology, English is no longer considered as a subject matter which is only taught four hours a week in the Thai classroom, as it used to be. It is accepted that English is in world-wide use as a medium of communication and learning, and even an instrument of power. Over the past 10 years a great deal of innovation in English language learning and teaching has been introduced in secondary schools. But up until now, it cannot be said that the Thai students' learning outcome has been satisfactory. This paper indicates what has been done in the Department of General Education (DGE) to improve Thai students in English language competence and also to train them to learn how to learn effectively. It is hoped they will maintain these learning skills after finishing their formal education and become learner autonomous.

- Bladen, John. (NSW Department of School Education, Australia)

Teacher Development - a career long consideration

This presentation will explore issues related to life long professional learning in a school focused environment. Issues will include the development of schools as learning communities, leadership development and student learning outcomes. Effective teacher induction programmes, school focused training and development, a core focus on literacy learning and continuous improvement in teaching/learning practices are essential if teachers are to become more effective in their work.

- Braus, Judy and Danie Schreuder. (World Wide Life Society, U.S.A. and University of Stellenbosch, South Africa)

Biodiversity Education: The Windows on the Wild Project

In this hands-on session, participants will get a chance to explore how two programmes - one in South Africa and one in the United States - are approaching environmental education. Both programmes are part of a new international initiative called "Windows on the Wild" aimed at helping teachers to focus, in their learning programmes, on local environmental issues in stimulating critical thinking, discussion, investigation and action. During this session you will get a chance to find out how two distinct, but closely related concepts are used as unifying themes for developing environmental education programmes.

In the United States, Windows on the Wild focus on Biodiversity in a process of working in collaboration with educators in developing resource materials which address a range of environmental issues, including sustainable lifestyles. In South Africa, Windows on the Wild focus on sustainability as unifying theme in a process of research and development with the view of developing a Life Science resource pack to help teachers come to grips with some of the key issues of education for sustainability. At the same time, teachers of the Life Sciences will be helped to understand and implement the new curricula that are being implemented as part of the process of education reconstruction in post-apartheid South Africa. Participants will get a chance to take part in several activities focusing on biodiversity, provide feedback to both programmes, and take home a variety of sample materials.

- Byron, Isabel. (International Bureau of Education, Switzerland)

Information for Change: the importance of the effective reporting and monitoring of educational innovations

The IBE has long been concerned with the reporting of innovative educational practices from around the world, seeing this as an essential part of its role in responding to the education information needs of Member States of UNESCO. In 1993, the IBE created the INNODATA databank of educational innovations as part of its renewed efforts at reinforcing countries' capacities for education research and decision-making through having better access to up-to-date, quality information on education systems, policies and practices in different countries and regions. The databank was also created to provide Member States with an instrument to improve their own reporting and monitoring of innovations undertaken at the national level.

INNODATA reports on innovative approaches principally at the levels of primary and secondary education in the formal sector of schooling. It covers the broad areas of curriculum, methods and teacher education, including all subject disciplines taught. Special emphasis is put on areas falling within the IBE's special research interests, namely, citizenship education, education for peace, human rights and international understanding, and education for sustainable development. In line with current trends, another area of focus for INNODATA is innovative practices in the use of information and communication technologies in the curriculum.

Using the databank as a starting point, this paper will discuss the importance of reporting on innovation and change in education, both for national governments and educational researchers world-wide. Successful large scale implementation of pilot projects can only occur through careful monitoring of change and reactions to it, in schools and the wider society. Awareness of innovative practices in other countries and attempts at replication of successful experiences can likewise only take place if relevant information is made available to policy/decision-makers. Effective reporting should help to explain why so many attempts at innovation fail to have long-lasting or

far-reaching impact, thus leading to the identification of possible solutions to this problem.

- Caluag, Aida C. and James A. O'Donnell. (Ateneo de Manila University, Philippines)

Educational Innovations: Reaching the Unreachable

Ever since Michael Hammer and James Champy co-authored their 1993 book on corporate life, the word "re-engineering" has become a buzz-word in business circles. Schools and universities have also come to see that they need to rearrange or restructure traditional ways in order to meet the emerging needs of a new century. Interest in distance education, open learning systems, and lately, the borderless classroom has emerged.

The Graduate Education Department of the Ateneo de Manila University (ADMU) in the Philippines, through its Ateneo Teacher Center (ATC), has ten years of experience in designing innovative approaches to continuing teacher education. Teachers have always wanted to improve, update and enrich their professional skills. Many wish to earn graduate degrees in order to move up the ladder of their school organizations. They have found, however, that once-a-week three hour classes spread over an 18 week semester call for a large commitment of time and energy. A three hour evening class - coming at the end of a full day of teaching and wrestling with traffic - often finds them mentally and physically exhausted. Thus, teachers who desire to continue their post baccalaureate programmes have become "unreachable". The experience of the ATC in mounting innovative approaches to continuing teacher education covers a range of formats - on campus, off campus and off shore - and employs different learning modules for each format. In a word, the ATC programmes have been re-engineered so as to reach the unreachable.

This paper will discuss the format and the conceptual framework of the learning modules being used in the various programmes. It will also present data from evaluation questionnaires administered to the participants of the programmes. Suggestions for the future, based on the evaluation data and experience of the ATC faculty, will conclude the paper.

- Carta, Cornelia D. (Community Learning Resource Center, Philippines)

Community Learning Resource Center (CLRC) Project in the Cordillera Region, Philippines

The Community Learning Resource Center Project in the Cordillera Region aims to improve/enhance the socio-economic condition of the farmers particularly the illiterate and neo-literate through the literacy cum livelihood and functional education

programme of the Department of Education, Culture and Sports, in coordination with the Local Government Units (LGU's) and allied agencies concerned in the delivery of basic services. It is a community based project and multi-purpose learning center managed by the active members of society.

The Community Learning Resource Center (CLRC) Project emerges from the local dialect "dap-ayan" which used to be the community meeting center particularly in the upland villages of the Cordillera Region. It is an improved barangay hall, that includes the provision of a simple library and other needed community resource materials which could be used for non-formal education classes particularly on literacy cum livelihood. The learning resource center is not merely a reading center but more a learning center equipped with various training resources and learning facilities designed to give relevant education, information and livelihood skills training that may upgrade the productivity competence of community people. San Juan Sur, Manabo, Abra was the pilot project site in 1992 and finally identified as one of the UNESCO and BNFE assisted CLRC projects in 1993-1994. At present, there are 10 centers throughout the Region.

The establishment of CLRC will serve as the Non-formal/In-formal Education Center designed to sustain literacy cum livelihood skills training and to cater to the basic services needed by the less fortunate in society. It may be an avenue to the equitable delivery of equal access to basic educational services in the rural areas of the Cordillera. Finally, the CLRC may serve as an entry point for countryside development programmes, inculcating the formation of cooperative system assistance in the empowerment of a community populace, who shall be organized and mobilized to operationalize their ingenuity and resourcefulness for community development.

- Chai, Teresa W.L. (Hong Kong Institute of Education, Hong Kong, China)

An Overview of the Development of Civic Education and Its Implication for Teacher Education in Hong Kong

The "School Education in Hong Kong: A Statement of Aims" issued by the Education Commission in 1994 stated the importance of civic education as an aim of school education in Hong Kong. Despite the fact that civic education has quite a long history in Hong Kong, it is criticized by the public in that civic education has never been successfully implemented. More than once the Chinese officials expressed the view that civic education in Hong Kong has to be emphasized in respect of the return of Hong Kong to China in 1997. With the increasing significance of civic education in Hong Kong, there is an urgent need for teacher training in civic education. This panel is a presentation of findings from a project in civic education in Hong Kong. The research results of the pre-service teachers' competence in teaching civic education in 1997 shows that civic education in teacher education needs to be reviewed. The documentary analysis of the development of civic education, from

which we can understand the relation of it to the results of the incompetent teaching in civic education of the pre-service teachers will also be presented. The result of this study will also be discussed in terms of designing civic education training.

- Chareonwongsak, Kriengsak. (Institute of Future Studies for Development, Thailand)

Television Talk Shows and Self-Education for Sustainable Development

A society that desires to implement a system of sustainable development needs to have the human element as the core of its development. Education is one of the most significant means to develop people especially in this globalized age when knowledge and technology have developed rapidly. As formal education alone has proven insufficient in equipping people to keep up with the rapid pace of global development, self-education should therefore be encouraged. Self-education can be achieved through the medium of television due to the fact that communicating through television is normally considered very effective. As well, television is easily accessible to nearly every individual in this country. However the medium of television is still not fully serving the purpose of self-education because, in general, television programmes are comprised of programmes designed to entertain. The 1994 Deemar Media Index confirms the dominance of entertainment programmes on television. Thus this situation is not conducive to promoting self-education for sustainable development.

The research proposed in this paper will reveal the effect of educational programming on regular television viewers. Data will be gathered by a random sampling of 200 individuals. These people will be grouped into two categories based on their educational background. Then each group will be divided into two groups of 50 people each, who will be assigned to watch the programme for two weeks, or a total of 14 times. After the research is finished, all 200 people will then be asked to again complete a similar set of questions in order to measure the level of information and understanding they have gained on the same issues on which they were pre-tested. Analysis of the results will be done by using multivariate statistical analysis by employing the SPSS programme. The results expected are that significant differences in the level of information and understanding as ascertained by the pre- and post-test results of those individuals who were asked to view the programme. The difference between those who view the programme and those who do not, is expected to be $p < 0.05$. The results are expected to show that those who watched "Focus Thailand" benefited from a noticeably more complete understanding of current affairs. This should be able to point to a conclusion that educational television programmes enhance people's ability to educate themselves, and in this way indicate that television is an effective means of developing people as a sustainable resource. The conclusion should reinforce the recommendation that Thai television should have a larger proportion of educational programmes in their

programming lists in order to accomplish the objective of developing people by encouraging self-study.

- Chaub Leechor. (Minstry of Education, Thailand)

Development of the Thai Scholastic Aptitude Test

In the Thai educational context, promotion of high-order thinking skills has been widely adopted as one of the major national curriculum goals that are instrumental in attaining sustainable development. This goal is infused into instruction of conventational subject area across the curriculum. In the past few years, several curricular proejects have been launched with an aim to help students develop forms of effective thinking that enable them to analyze arguments and evaluate ideas critically, to exercise informed and sound judgment, and to solve problems rationally and creatively. However, most of these efforts have either received inadequate evaluation or gone virtually unevaluated, especially in a summative sense. School teachers, administrators, as well as high-level decision-makers are badly in need of evaluative information as to the extent to which the educational objectives related to high-order thinking development are fulfilled.

The Thai Scholastic Aptitude Thai Development Project (TSAT) was created in the Department of Curriculum and Instruction Development (DCID), Ministry of Education in 1993 as a response to the need of information concerning students' thinking skills development. The principal goal of the TSAT Project is to construct a standardized test that measures important aspects of high-order thinking skills of students at the upper-secondary school level. A large number of measurement experts are involved in this project, including senior test specialists within the Ministry of Education and professors from leading colleges and universities throughout the kingdom. The test development process consists of five main phases:

1. Preparing test and item specifications;
2. Developing the item pool;
3. Field-testing and analyzing the items;
4. Assembling the test and compiling norms; and
5. Conducting reliability and validity studies.

The Item Response Theoretic (IRT) models are employed in conducting the field test, analyzing the tiems, scaling, norming, and test equating.

- Chulavatnatol, Montri. (Teacher Education Reform Office, Thailand)

Recent Innovations in Teacher Education Reform in Thailand

"Education for All" is a widely accepted policy and it speeds up the expansion of education. Implementation of the policy tends to erode education quality. To enrich education quality, quality teachers are quintessential. To this end, the Teacher Education Reform Office (TERO) is launching 5 key innovative programmes: (1) National Teacher Awards to support top teachers to undertake quality teaching projects; (2) academic coupons to accelerate in-service training for most teachers; (3) new generation teacher education programmes by joint operations among governmental, private and non-governmental institutions; (4) school rating by subjects to inform public of the quality; and (5) school visits by top professionals to initiate community participation in order to improve education quality. Priority will be given to the secondary level, focusing on 7 key subjects: mathematics, physics, chemistry, biology, computer science, Thai and English. The innovative aspects of these programmes will be discussed in contrast to the existing conventional approaches to teacher education, in-service training and school management. To sustain the new systematic improvement of teachers, TERO must be transformed from the current bureaucratic office into an efficient executive agency and a teacher reform fund will also be established. The success of these innovations should allow the "Education for All" policy to be realized in Thailand without compromising education quality.

- Chuvej Chansa-ngavej. (Chulalongkorn University, Thailand)

Performance Indicators for Universities: An Analytic Hierarchy Process Approach

Rankings of universities and higher educational institutions have been conducted and their results published widely in various parts of the world. Among the best-known US-based rankings are the U.S. News and World Report newsmagazine's annual ranking of America's Best Colleges, the Business Week magazine's biennial ranking of "The Best B-Schools", and the Gourman Report. Examples from the UK are the Research Assessment Exercise conducted jointly every four years by the four higher education funding bodies in England, Scotland, Wales, and Northern Ireland, and the Times Higher Education Supplement's University League Tables. Examples from other regions are Maclean's magazine annual ranking of Canadian universities, the Good University Guides and their associated annual University of the Year prize and the Asiaweek newsmagazine's list of best universities in Asia and Oceania.

The present study is an attempt to improve on the published ranking methodologies through the use of theoretical frameworks, guidelines, and standards. It is the contention of this study that any ranking system needs to specify clearly its purpose whether it is intended mainly for use by university administrators in their quest to improve the efficiency of its operations, or whether its publication is to aid prospective students and their guardians in their college search. This is because the design of the appropriate set of performance indicators very much depends on the intended use of the ranking outcomes.

The TSAT project is scheduled to be completed in 1998. Up to now, an item pool with more than 2,000 test items has been created, and about one-third of the items have been field-tested and analyzed. At this moment, test specialists are evaluating and selecting the test items, and it is expected that two parallel forms of the TSAT will have been assembled and ready for reproduction by the end of this year. This test will be administered to grade 12 students as part of the National Assessment of Educational Standard next year.

- Clements, M.A. (Ken), and Nerida F. Ellerton. (Universiti Brunei Darussalam and University of Southern Queensland, Australia)

Competency-based Teacher Education Models: Neither Innovative Nor Helpful?

During the 1990s the value of competency-based models of teacher education has been increasingly accepted by teachers and teacher educators. It is difficult to argue against the viewpoint that there is a need for generic teaching competency statements which describe what all beginning, and indeed experienced, teachers should know and be able to do. Some believe that the teaching profession will always tend to be low in status unless competency-based teacher education models, which will enable guarantees to be made that qualified teachers possess desirable skills, knowledge, and attitudes, are developed, trialed, and adopted.

Despite the perceived advantages to adopting a competency framework for teacher education, this paper raises questions about the desirability of outcomes-based, competency-based approaches to teacher education. It is argued that such approaches are generally neo-behaviourist, and suffer from all the weaknesses that research has revealed whenever behaviourist practices have been implemented in school (and, especially, classroom) environments. In particular, the approaches (a) lack an adequate research base, because dependent variables purporting to measure teaching efficiency have often been based on narrow pencil-and-paper tests, or on checklists of very traditional classroom practices; (b) atomise both thinking about teaching, and the practices of teaching, because they place too much emphasis on observable indicators; and (c) stifle needed creativity in methods for approaching teaching, and therefore help maintain the status quo.

- Coloma, Teresita M. (Cooperative Development Authority, Philippines)

Education for Development Through People Empowerment in the Cooperatives

The next millennium poses many challenges not only to governments but to the people themselves. Communities both in the urban and rural areas cannot remain forever as end-users and recipients of government development efforts. They are now viewed as aggressive partners in local and national development and governance. Development planning and decision-making are taking on the bottoms-up approach where the local leaders and citizenry participate in economic, environmental, educational and political activities.

One, if not the most popular and best mechanisms for people's participation in local development and local governance is through cooperatives. Given the Cooperatives' comparative advantage over other people's organizations in their very nature as democratic and voluntary membership of people with common needs and interests, and bonded by the shared spirit of mutual understanding, cooperation and respect, development permits can be better met and carried out. Sustainable development prospers in an environment of peace, cooperation, unity, understanding, respect, equity and social justice. Cooperatives when imbued with these very elements, can be a fast tracking mechanism in ensuring sustainable development. Governed by the universal principles of cooperativism and the Convention Statement on environmental protection, the cooperatives' role in the education of their membership from basic education to functional literacy, the economic, political, cultural and social, scientific and technological as well as moral aspects of development can be enhanced. People are the center of all development efforts and interests. Therefore, people in the communities, when harnessed through their continuing cooperative education and training programmes, can indeed be effective partners of sustainable development. In fact, they should be eventually the initiators of development activities.

Paradigm shifts on the role of cooperatives in societies means that cooperatives in the 21st century are the self-reliant, self-directing, self-respecting and self-propelling breed of community citizens driven by the value of making a difference in life.

- Crawford, Douglas Houston. (Queen's University, Canada)

The Ecological Footprint - A Flexible Educational Tool for Understanding Sustainable Development

For most people, the term 'Sustainable Development' came into prominence with the publication of the Brundtland Commission Report of 1987, our common future. Much discussion and debate has taken place since then, and the vagueness of

the 1987 definition has been both praised and criticized. 'Development' is used over a wide range of contexts, while the special definition offers no hint or what 'Sustainable Development' involves in practice, what commitments it requires, or what the users will be.

Today there is wide agreement that the Earths Ecosystems cannot sustain current levels of economic activity and material consumption. Economic activity (as measured by gross world product is growing at 4 per cent a year, while population (now 5.8 billion) is expected to reach 10 billion by 2050. Even more significantly material consumption and per capita energy consumption are increasing faster than human population. All this points to a mighty collision between the word economy and the ecosphere.

Recent work has resulted in the concept of "Ecological Footprint Analysis". The flows of energy and matter to and from any defined economy are calculated and converted into the corresponding minimum land/water area required from nature to support these flows. This yields a lower limit to the resources that economy needs.

The educational value of this analysis tool is very considerable. It can be applied to any country/region in the world, thus enabling relative comparisons of the use of limited resources, against what would be a "Fair Share". This paper will outline the data and procedures needed to calculate a specific footprint, and suggest several applications, such as its meaning for trade and sustainable practices.

- Crowder, Van. (Food and Agriculture Organization of the United Nations, Italy)

Agricultural Education for Sustainable Rural Development: Challenges for Developing Countries in 21st Century

Food security and its relationship to sustainable agricultural and rural development have increasingly become matters of concern for developing countries and for the international community. While there are many complex factors that influence food security, it is clear that education in agriculture plays an important role in preparing farmers, researchers, educators, extension staff, members of agribusinesses and others to help improve food security. A critical issue in the 21st century will be the changes and adaptations required in agricultural education in order for it to more effectively contribute to improved food security, sustainable agricultural production and rural development.

Unfortunately, the training of human resources in agriculture is often not a high priority in the development plans of countries. As a result, curricula and teaching programmes are not particularly relevant to the production needs and employment demands of the agricultural sector. The situation has become more

serious in recent years due to the economic crises in the public sector in many developing countries.

Agriculture will remain for many years a major contributor to the economies of most developing countries. In some countries, however, its share of the GDP will progressively decline. The agricultural sector in developing countries is undergoing rapid changes as a consequence of both technological progress and economic forces which call for an increased market focus, competitiveness and higher productivity.

Employment opportunities in the off-farm sector are expected to increase at a faster rate than in agriculture. This will further emphasize the present employment shift of agricultural graduates to related sectors, requiring a revision of existing curricula to better address educational needs.

In the next century, agricultural education institutions in developing countries will need to address not only immediate production needs, but also long-term food security, sustainable agriculture and rural development needs. This will require moving from a single-disciplinary approach to an inter-disciplinary, systems approach which incorporates a wide range of new topics, including gender, environmental and population issues.

A major challenge will be the transformation of agricultural education institutions into dynamic promoters of change within their environments. This will require that they abandon long-established traditions of academic isolation and become active contributors to sustainable agricultural and rural development through innovative teaching, research and extension.

- Daniel, Arzu E. and Sarah Magrabi. (Ali Institute of Education, Pakistan)

A Meaningful Initiation into Teaching

A beginning teacher is full of hopes and zest for working wonders in his/her classrooms. However, this dream does not often come true. One frequently encounters disillusioned beginning teachers complaining about the inapplicability of the espoused theories and practices preached in the teacher education institutes. As beginning teachers, they face a milieu that denies practising what they learnt as student teachers. This could cause them - in the process of being initiated into the profession - to lose all hope of embarking on a meaningful and fruitful teaching career.

A teacher education institute in Pakistan has taken account of the predicament faced by beginning teachers and designed a pre-service teacher education programme that requires its graduates to follow a one year internship. The vision behind this internship is to enable the graduates to have a smooth induction into the profession of

teaching. The internship component has evolved over the past five years. It has changed its course, remained dormant and then has recently been rejuvenated into a programme that is flexible yet with definite goals behind it. The paper discusses the evolution of this internship programme. For the purpose of collecting data we have interviewed a selected group of graduates who have completed the requirements of the diploma during the previous years. The feedback from the faculty who have witnessed the evolution of the internship has also been collected to analyse the effectiveness of the internship programme. We hope that this model of internship programme can provide some food for thought for teacher education institutions, in other countries with a similar context.

- De La Cruz, Edith. (Miriam College, Philippines)

Our Stewardship Role: A Value Perspective Experienced in Filipino Local Traditions

The value of stewardship has long been a part of the value system of the Filipinos. However, as commercialization and consumerist views have taken over the Filipino way of life, the stewardship role has radically lost its significance and people have started to treat the earth in a mechanistic way. Thus, the depletion of Philippine resources and other environmental problems such as pollution, soil erosion, and floods have set in. This paper recognizes the need to go back to our stewardship role so that we can help prevent environmental problems, nurture the environment, and guarantee a sustaining environment for our children.

The objectives of this paper are: 1) to discuss the nature of the stewardship role, 2) to review the traditional values that emanate from this stewardship role, 3) to describe Filipino traditions expressed in beliefs and practices that portray values for the environment, 4) to present a case of a Filipino model steward and 5) to provide teachers with examples in environmental education using indigenous knowledge and practices. Lessons in environmental values can be learned from experiences in some Filipino traditions.

This paper utilized mostly observation, interviews, anecdotes, and local documents to describe the Filipino traditions that demonstrate the people's role in earthkeeping. It also focused on the people's priceless knowledge on how to care for the environment. The data are ethnographic in character. The Filipino people, especially the indigenous communities, have developed ways to live in balance with their habitat - a balance that has not degraded their environment over a long period of use. It is hoped that their way of caring for the earth can serve as examples of sustainable living and provide more meaning to the call to stewardship.

- Dickinson, Valda and Shukri Sanber. (Australian Catholic University, Australia)

Formation Of Community Based "Para-Counselling" and Mental Health Education Programmes By Displaced Sudanese And Ethiopian Men

A major challenge faced by refugees in East Africa is to encourage, energise and assist their companions who have become depressed and mentally unbalanced due to the effects of displacement, war, torture and starvation. This educational innovation focuses on a group of Sudanese and Ethiopian men who took the initiative to research, develop and implement a programme that contacted and provided a service for those suffering in this way and educated others to do likewise.

The paper will entail a qualitative analysis and discussion of how the group, with the assistance of an outside facilitator who was a trained psychologist, thought and felt their way through learning episodes to come to a definition of "para-counselling" and their role as a team of mental health support workers and educators. Case studies and critical incidents will be used to show the men's experiences, feelings and reflections as they moved into their respective communities, listened to the problems expressed there and proceeded to develop together as a group an appropriate and effective way of behaving to meet expressed psychological and emotional needs. There will be a presentation of the assumptions, values, ethics, problems and questions that surfaced from the "para-counsellors" themselves and the recipients of their services. The influence of the different cultural schemas and the specific environmental context on group processes and on the adopted methods of intervention and education will be discussed.

This educational innovation demonstrates how a self-motivated group of adults acted to improve their own education and bring about change in themselves and in their wider environment. By becoming active subjects in their own learning they set up their own network of helpers to support each other and to provide a service of visitation, consultation, basic counselling and day care to those who are suffering from mental disturbance and depression.

- Dickinson, Valda. (Australian Catholic University, Australia)

African Refugee Women Develop A Community Education And Support Network - An Educational And Organizational Analysis

This paper focuses on an adult community education venture involving refugee women from Somalia, Sudan and Ethiopia. These women had experienced the ravages of war and displacement and were living in a difficult physical and emotional environment. Techniques of reflexology, massage, active listening, story telling and the processing of critical incidents were mastered by the women over a six

month period as part of a low cost community building, relaxation and alternative healing programme. These women established centres within the camp where other refugees could come to have their feet and hands massaged, to share stories and converse. The women also taught other women the techniques. Educational circles multiplied and services expanded. Each week those involved in organizing the network, providing services and teaching met to care for each other, receive inservice and reflect on their work and experiences.

This educational innovation is now into its second year. It has become a source of income-generation as it attracted sponsorship from a non-government organization (N.G.O.) which provides small incentives. It has become an avenue whereby the organizational leadership and educational talents of the women have been affirmed, utilized and developed.

The paper contains a descriptive analysis of the educational and organizational processes used to establish and develop this venture. There will be an ethnographic and textual analysis of selected taped group interactions, where the women, as conversational partners with their initial teacher, analyse their experiences as learners, practitioners and educators by reflecting, evaluating and reconstructing experiences. This will give windows into the tensions and drama of the world and environment the women inhabit and the challenges they face in pursuing their objectives. It will also reveal perspectives and assessments of what has been accomplished and what now needs to be implemented and/or improved.

- Dorji, Jagar. (Ministry of Health and Education, Bhutan)

Fostering International Values and Local Traditions

Education in the developing countries seems to be pre-occupied with the struggle with the numbers game. The explosion of the student population and the resulting demand for more schools, coupled with limited resources and lack of local expertise, have been the main causes. Fostering international values and local traditions is a part of the effort in providing qualitative education to our children to enable them to live their adult life with confidence, while they will also take pride in maintaining their ancestral roots. International values are necessary in helping the younger generations for a harmonious living in the diverse and shrinking world, whilst the local tradition and customs continue their link between the past, present and the future. As we step into the next century, we must think of diverting our energy from gambling with numbers to ensuring quality education including the two aspects of life being discussed in this paper.

The education policy in Bhutan emphasize wholesome education. To ensure this, the level of basic education will be raised from class VI to class VIII. Respect for living beings in general and human beings in particular are some of the basic

tenets of Buddhism. While values of international relevance have found a smooth passage into the policy of the Royal Government at the first instance, issues of global concerns are also blended into the formal curriculum for school education. The Education Division has also decided to review its primary education system, mainly because it is believed that the existing curriculum does not fulfil the requirements of wholesome education. The question of values will be one of the main foci in the review and how to improve this aspect in our new programme, if the need arises. It is hoped that this Conference will give further insight in making our education system more qualitative and sustainable. We believe that education in Bhutan for the next century can have a solid base so that children in our country will find their adult lives personally satisfying and happy, socially useful, and economically productive.

- Dountipya, Soontaree. (Rajabhat Institute Kamphaengphet, Thailand)

Classroom Environmental Management for Development of Student Communication Skills for Sustainable Development

Higher Education Institutions have set student outcomes for reaching the university-product goal. Institutions must manage the campus environment to encourage student outcomes. Communication is one of the student outcome indicators. Students use communication as the tool for development in the cognitive, affective and psychomotor dimensions. Students who have communication competence view each other through the use of verbal and non-verbal symbols. This understanding facilitates one's role being identified. These characteristics relate to sustainable development.

This study is based on the I-E-O- Model of Astin's theory. The teacher has to manage the classroom environment for developing student's communication skills and to develop sustainable student outcomes. From different methodologies it can be expected that students will develop communication skills.

- Ellerton, Nerida F., and M. A. (Ken) Clements. (University of Southern Queensland, Australia and Universiti Brunei Darussalam)

Benchmarking and Value-added Accountability in Education: Neither Innovative Nor Helpful?

The terms "benchmarking" and "value-added" have been increasingly used within education communities in many nations during the 1990s. These words have an innate appeal to school communities, to bureaucrats and to politicians - *of course* we want schools to add value to the education of our children, and how can we know if value has been added unless benchmarks have been established? As with all sensible ideas in education, though, it is in the fleshing out of related concepts, and in the operationalization of these, that the potential of the ideas is (or is not) realised.

"Benchmarking" and "value-added" accountability approaches in education have generated petty atomised practices in which government bureaucrats have disseminated their theories by top-down, "do-it-this-way-or-else" edicts. Education efficiency measures have been calculated by linking crude measures of value-added educational output with expenditure, and these measures have then been used to justify the downsizing of teaching and administration personnel. Bureaucrats, behaving in this way, have colonised terms such as "quality" and "best-practice," and have used control of funding arrangements, as well as questionable methods for collecting and analysing data (like, for example, statistical analyses of computer-scored responses to multiple-choice, stand-alone pencil-and-paper tests), to place pressure on "ordinary workers" (e.g. teachers) to conform to their quality management edicts. Educators lower down the hierarchical ladder, faced with the challenge of survival, have often engaged in actions which are at odds with their own views of what constitutes acceptable professional behaviour.

There is now a loud chorus of academic voices opposed to these forms of so-called "quality management." Those who have joined the protest point to the dangers of compulsory systems of benchmarking and value-added assessments of teachers, schools, and school systems. Some of the dubious practices, arising from benchmarking and value-added assessment regimes in education, are summarised in this paper.

- Fien, J. (Griffith University, Australia), David Yencken (University of Melbourne), Purisma Remorin (West Visayas State University, Philippines), M.J. Ravindranath (Centre for Environmental Education, India)

Young People and the Environment: An Asia-Pacific Study

This short symposium will report on a major international research project which is using similar, but culturally modified, survey and focus group methods to explore the environmental knowledge, beliefs and behavioural patterns and tendencies of 16-17 year old students in high achieving secondary schools in fifteen countries in the Asia-Pacific region. The symposium will begin with a paper which analyses recent literature on attitudes to nature in Asia and other parts of the world and asks is there evidence of a transition towards more of a common or universal environmental ethic? This will be followed by reports of the progress of the study from national research coordinators in two of the countries involved - India and the Philippines. The symposium will conclude with an open discussion of the themes raised in the papers and the implications of this research for environmental education.

- Filor, Seamus W. (Edinburgh College of Art, Scotland)

Collaboration in the Highlands of Scotland: Landscape Studies 1983-96

Over a period of thirteen years (1983-96) the Postgraduate Landscape course at the University of Edinburgh undertook an annual group study, sponsored by the Highland Regional Council. Although each project varied in detail, they were all generated by the actual or anticipated impact of change on the fragile local human and biotic communities. Examples range from trunk roads by passing settlements; the closure of major industry and the effect on local employment; withdrawal of agricultural and forestry grants; and growing awareness of sustainability and the need to conserve and to manage sensibly our natural and cultural resources.

The introduction to the paper will briefly describe the objectives of the Regional Council, the University landscape course and the local communities and interest groups. The range and character of the projects is then discussed, to illustrate how clearly these objectives were achieved in practice. One project is described in some detail - the Castletown/Dunnet Bay Initiative (utilizing the traditional stone artifacts and flagstone industrial archeology to generate tourist and educational interest).

The paper concludes by describing not only the immediate educational and community values of these exercises, but the longer term benefits from their implementation. These have had influence in terms of input to local and subject plans, in galvanizing and focusing community action, and in exposing the student group to local values through interest group and public meetings. Probably there are two major benefits from these projects; firstly the students learn that the Highland landscape is just as much a result of human forces as natural ones; and secondly the local planners, politicians, special interest groups and landowners learn through the work of students of the need for a rounded, holistic, more sustainable approach to the challenges of planning and managing these fragile areas.

- Fradkin, Bernard. (College of DuPage, U.S.A.)

Soaring to Excellence and Dancing With Change: Anatomy of a Successful Live Teleconference

Gates has cut in on Gutenberg, and let's face it, libraries are getting quite a whirl. Meanwhile, our dance cards are too full and there are too many suitors. Do we continue to pirouette in our familiar world, striving for classic balance between print and the "virtual library?" Do we "bring in da noise, bring in da funk" and tap dance to the constant demands of "technolust" Or, do we strive for the energy discipline and synergy of the tango, the perfectly synchronized union of graceful change and

movement for both library and patron, that only comes with energy, discipline - and muscle. Be there when the downbeat sounds for *Dancing with Change*, one of the most important library teleconferences of the '90s, designed to offer today's top library thinkers a results-oriented approach that is practical and realistic.

That was the promise- what was the reality? Did the viewers receive what they bargained for in participating in the teleconferences? Who came and what did they find helpful and what left them wanting more? What were the elements that were measured and how were they received? The autopsy of these results will bring the specific findings related to the *Dancing* and *Soaring* teleconferences to you in the first open presentation of this information that confirms the impact of this powerful genre for training on a national level using live satellite teleconferencing.

About teleconferencing....

A teleconference is transmitted by satellite from one site to up to thousands of other sites. It's a very effective way to reach a large number of participants. It's also a very effective way for those participants to truly take part in the discussion called "real-time electronic feedback," by phone, fax, e-mail and the Internet.

***Soaring to Excellence* Teleconference Series...**

Now in its fourth year this teleconference has been received at thousands of sites in the United States, Canada and the Virgin Islands. Participants have included the small and the mighty in the library and information world - all types of learning and library organizations have participated. The teleconference is especially designed for the training of library assistants.

***Dancing with Change* Teleconference Series...**

Initiated after the success and growth of the *Soaring to Excellence* series this programme is now in its second year of presentation. This series features a prominent "expert" in the field meeting with several representatives from the library and information field to consider a library "hot topic."

- Gaduyon, Ma. Lilia. (Commission on Higher Education, Philippines)

Massive Upgrading of General Education Instructors

To implement the thrusts in higher education in the Philippines, a low cost innovation is now going on in two of the 14 regions. Through the years, a perennial deterrent to quality, relevant, accessible and effective education has been lack of qualified college instructors. A recent survey showed that only 3% of the 12,000 instructors of General Education in Region VI have the appropriate masteral degrees.

These 36 are concentrated in only six of the 103 universities and colleges. The masteral specializations offered in most schools in the region are educational management and guidance counseling, hence teachers have to go to Manila or Cebu where the eight specializations are offered.

To ensure access to higher education as a vehicle of progress, the Massive Upgrading Programme for General Education Instructors of Region VI was given a grant of Peso 12,959,400.00 by the Commission on Higher Education. Each participant has an allotment of Peso 7,300 (US\$270) to finish 18 specialization units which will qualify him/her to teach General Education subjects. This grant enabled 1,171 instructors to enroll in eight specializations in six degree-granting institutions: Mathematics, Physics, Natural Sciences, Chemistry, English, Filipino, Social Science, Physical Education as well as Humanities and the mandated subjects. The other subjects needed to finish the masteral degree fall under Phase 2 of the programme. Selected professors with the appropriate degrees handle the courses. A stipend of Peso 5,000 is granted to each state Higher Education Institution (HEIs) participant. Each participant from the private gets Peso 9,000 from the Fund for the Assistance of Private Education.

The programme addresses General Education as the first priority, since it is the foundation of all higher education.

- Garcia, Enrico B. (Philippine Normal University, Philippines)

Development and Validation of a Scale to Measure Environmental Awareness of College Freshmen at the Philippine Normal University

The study utilized a non-experimental design employing descriptive and quantitative methods of research. To develop and validate the Environmental Awareness Scale (EAS), a four step process was followed. First, the indicators of environmental awareness were identified. From these important indicators, text items were constructed - the second phase. The instrument has two parts: Part I which includes Knowledge of Environmental Concepts/State of Environment and Problems/Issues; Part II determines the frequency of performing tasks like: Awareness of the Need in Formulating Alternative Solutions to Environmental Problems, Awareness of the Need in taking Actions in Solving Problems, and Awareness of the Need of Possessing a High Degree to Commitment and Advocacy to environment. The third stage focused on editing and trying-out the instrument. The items constructed were submitted to a panel of experts for face and content validation. The fourth stage concentrated on the evaluation of the final draft/form of the instrument by establishing its reliability and validity. The measure of reliability yielded high positive correlation coefficient; a coefficient of 0.99 in the test-retest method; while the discriminating power of the test yielded a correlation coefficient of 0.826 and 0.981 for Part I; and correlation coefficient of 0.449, 0.681 and 0.807 for

Part II in the Internet Consistency of the Items Per Sub-test Method. Construct validity was confirmed by the results obtained from the measures of convergent and divergent validations. The resulting correlation coefficient between the scores in the new instrument (EAS) and the EAT - Environmental Awareness Test, was 0.973. When the scores in the EAS were correlated with the scores in the Mathematical Attitude Scale, the resulting correlation coefficient was 0.348. These results showed that the newly developed instrument possesses construct validity. The overall weighted mean of the subjects in the EAS was 2.715 in Level I which means that the PNU college freshmen seems to be moderately aware of environmental concepts and issues, and 2.297 for Level II which shows that the subjects seem to seldom perform the task of formulating alternative solutions, seldom take actions to solve problems, and manifest a low degree of commitment and advocacy to the environment.

- Gawsombat, Phadet. (Non-formal Education Northeastern Region Centre, Thailand)

Non-formal Education Development through Community Participation

The Non-formal Education Department renders services to the people who stay outside the school system, particularly, those who miss or are deprived of educational opportunities. It acts as the coordinating mechanism for both government and non-government organizations throughout the country. Many projects concerning grassroots participation have been experimented with by the Non-formal Education Department to suit the needs of the people e.g. basic education, short-course vocational training and information-service network.

The **strategy** used in order to urge community participation has 7 steps as follows:

- Step I : To go to the people (the education programmes selected are by the people and for the people).
- Step II : To stay with people (not to be a stranger but a friend).
- Step III : To think with people (not to be an expert but a member of the group).
- Step IV : To plan with the people (united as one).
- Step V : To operate with the people (respect the people's ways of life and their local cultures).
- Step VI: To evaluate with the people (the evaluation must be simple and understandable).
- Step VII : To leave with the people (the ongoing programmes will be conducted continuously by the people themselves).

The approach has been applied through action research and community participation in 3 phases. These are : 1989-1991 which was the pilot project, 1992-1993 which was the expansion of the project and 1996-1997 which was a verification period. Outcomes of the projects were multi-sets of learning media which emerged from various energetic groups to improve their quality of life as well as to better their

communities. Moreover, many local experts - people who pass on local wisdom and virtually acquired knowledge through practical work and are assured of success - are resource persons in Non-formal Education activities.

- Gicain, Maria Socorro C. (Leyte University of Technology, Philippines)

Towards the Development of Resource Materials in Peace Education

The study sought to develop resource materials in peace education. It answered the following questions:

1. What are the factors associated with peacelessness in the selected areas of study in Region 08 in terms of the following issues:
 - 1.1 Poverty (Health and Nutrition)
 - 1.2 Literacy
2. Is there a significant difference in the responses of the identified respondents along the various issues associated with peace education?
 - 2.1 Teachers
 - 2.2 Military
 - 2.3 Media
 - 2.4 Religious
 - 2.5 Businessmen
 - 2.6 Local officials
3. What resource material could be evolved from the results of the study?

This study tested the hypotheses that: There is no significant difference in the responses of the identified respondents along the various issues associated with peace education? The study utilized the descriptive method of research. The issues studied were poverty (health and nutrition), and literacy. It utilized a self-structured questionnaire.

Poverty.

Health. In terms of health concerns, the factors that aggravated peacelessness were the incidence of identified illnesses and the residents' attitude towards caring for their own and thus their family members' health in the identified place of study.

Nutrition. Concerning nutrition, the factors associated with peacelessness were manifested in the manner of eating and the kind of food eaten. It was found that the respondents were malnourished.

Literacy. The causes of peacelessness in this area of study were the great number of student dropouts and the financial problems faced by the respondents.

The result of the study became the basis for the development of resource material to be used as a reference material at the tertiary level for instructional purposes.

- Gough, Stephen. (University of Bath, United Kingdom)

Education and Training for Sustainable Tourism: Problems, Possibilities and Cautious First Steps.

All tourism, including ecotourism, has environmental impacts. Tourism is the world's largest and fastest growing industry. International tourism, of which ecotourism may account for between 40 and 60 per cent, seems certain to be the largest sector in international trade by the year 2000. Domestic tourism is bigger still, accounting for more than 90 per cent of global tourism receipts. The tourism industry probably bears on a wider range of economic sectors and social interests than any other. In short, if tourism develops unsustainably, then sustainable development in general will be unachievable. It is easy to establish a consensus around the view that education and training are crucial for sustainable tourism development. Unfortunately however, there is much less agreement about who should be taught, by whom and about what; or, again, about how educational programmes should be delivered and the outcomes evaluated.

It is argued that the appropriate educational response to this situation is not to search for, or support, a single "correct" view of education, tourism and sustainability. Tourism development and its social and physical environmental consequences raise complex, interconnected issues characterized, above all, by persistent uncertainty. Different views of the possible role of education in promoting sustainable tourism are, it is argued, products of different sets of credible assumptions which individuals and groups make in order to cope with this uncertainty on a day to day basis. First steps towards an innovative, interdisciplinary educational response are outlined. The approach, which draws on insights from environmental education, cultural anthropology and environmental management, accepts continuing uncertainty as intrinsic to sustainable tourism development, and aims to manage it by recognizing and engaging competing views.

- Guerrero-Padilla, Marivic. (NAMEI Polytechnic Institute, Philippines)

Values, Education and Technology: The Engines of Change for the Future

Great observers of world events like John Naisbitt, Alvin Toffler, Kenichi Ohmae, Herman Maynard Jr. and Susan Mehrtens have seen the major problems affecting our life today as well as the great trends slowly emerging from their ashes. From the existing decay and turmoil of today, new shifts in consciousness are slowly changing the world and its world view. While they are united in identifying the

technological breakthroughs that are sweeping the world, they miss the great waves of history. Yet, it is history that is the truly relevant source of change.

Studying these historical events, we can enumerate six emerging tides of revolution namely: the demise of communism and the end of violence, the increased democratization and the wider experimentation with market economies, globalization, the technological revolution that is bringing about the Information Age, the vital influence of the United Nations, and more particularly a wonderful spiritual reawakening of peoples. While these are the major forces causing a rebirth of values, of Renaissance can be felt greatly in the areas of democracy, business, education, ecology, technology and psychology. It is in these areas that education can be a dynamic force for positive change.

While the waves of change are still timidly creeping in, they are gaining in momentum. It is therefore the task of education, as the watchtowers of history, to identify the negative and the positive forces. Against the negative waves, education must defend and safeguard our spiritual values. But education must likewise initiate and cheer on the positive waves if it is to be a dynamic centre for change. At this point in history, it may seem that there are many positive forces that are shaping the future and that we are actually at the doorstep of a new and wonderful era that is so promising and exciting.

- Guevara, J. Roberto Q. (Asian-South Pacific Bureau of Adult Education, Philippines)

A Learning for Environmental Action Framework: Evolving an Asian-South Pacific Framework for Adult and Community Environmental Education

The marked growth of the so called "tiger economies" in the Asia-Pacific region has resulted in massive environmental destruction, the marginalization of peoples and the erosion of social and cultural values. However, amidst this seemingly bleak scenario is a growing awareness of the complex interrelationships of factors determining genuine development, political democratization and environmental destruction. Evidence of this is the proliferation of development organizations in the region that continue to question the present global order and the strengthening of people's movements actively involved in programmes towards the attainment of a more sustainable future. It is within this regional context that a set of principles on adult environmental education is being evolved from the experiences of adult and community educators in the region. The framework builds on previous documents like the Belgrade Charter Global Framework for Environmental Education and the Treaty on Environmental Education for Sustainable Societies. The framework recognizes that environmental education is a life-long learning process that involves all of us as learners and educators; is interdisciplinary; integrates the historical, political, social, economic and cultural contexts; covers a wide learning spectrum, from awareness, understanding, internalization and action; values indigenous and

local knowledge; recognizes the role of both women and men in environmental protection, while contributing to the empowerment of women; is contextualized to the local and global realities, and explores participatory and creative learning methods that are culturally appropriate. These principles hope to initiate an on-going learning process about the theory and practice of adult environmental education, involving interactions between both learners and educators throughout the region. This interaction is one that hopes to lead to better informed environmental action.

- Gunawardena, G.B. (Universiti Brunei Darussalam)

Restructuring Schools for Sustainable Development

Restructuring schools, continues to be one of the strategies used to develop education in both developed and developing countries. Many education systems have schools with wide disparities determined by historical reasons, location of schools, cultural factors and limited resources and this has prevented the much desired goals of equality of opportunity and quality in schooling. A global problem of limited resources has directed the minds of those engaged in educational development, particularly at school level, to plan for sustainable development which would "meet the needs of the present generation without compromising the needs of the future generations". Restructuring is seen as a viable solution to achieving sustainable development.

The proposed paper will analyse the school restructuring programme implemented in a developing country - Sri Lanka - from 1984. Sri Lanka, since Independence in 1948, introduced a number of far reaching changes and innovations - free education from kindergarten to University, the medium of instruction to be national languages, a common school curriculum, indicating that the ideal of equality of opportunity reigned supreme in the efforts to develop education. Though these reforms were great strides toward development, the school system with its widely different characteristics, with regard to pupil numbers, span of grades, provision of co-curricular activities, parental and community support, and both human and material resources, could not provide equal opportunity and benefit from the reforms introduced. The cluster school experimental project introduced in Sri Lanka with promising sustainable characteristics, is a valuable experience that tested the ability of a developing system, in achieving its much desired development in education.

- Hager, Paul. (University of Technology, Sydney, Australia)

Recognition of Informal Learning: Challenges and Issues

An important part of educational innovation for sustainable development is the recognition of the educational value of learning from whatever source. However, thus far, traditional educational structures have largely discounted informal learning.

A growing interest in vocational education and training by both policy makers and the research community in many countries during the 1990's suggests that the time may have come for informal learning to receive serious attention.

Four aspects of recognition of informal learning will be discussed in this paper. They are:

1. *Recognition of informal learning as credit towards formal educational qualifications.* This kind of systematic recognition is desirable not only on equity grounds, but also in terms of more efficient use of educational resources. The theoretical and practical difficulties of this kind of recognition will be discussed.

2. *Recognition by the educational establishment that other knowledge is valuable.* Education systems traditionally privilege certain kinds of knowledge at the expense of other kinds. Recognition of informal learning raises fundamental questions about the status accorded different kinds of knowledge.

3. *Recognition by learners of the extent of their own learning.* Much informal learning is described in the literature as 'tacit'. As well, learners are often unaware of the extent of their own learning. Because of the differential status of different kinds of knowledge, such knowledge is often undervalued by learners themselves. However, there is no need for much of informal learning to remain tacit.

4. *Recognition of the role of the many relevant contextual factors.* The high sensitivity of informal learning to contextual factors needs to be recognized. Traditional views of knowledge see this as a limitation. However, it is argued that contextual sensitivity can be turned to educational advantage.

- Harako, Eiichiro "Atom". (Tokyo Gakugei University, Japan)

"Kogai Kyoiku" Revisited

After World War II, Japan concentrated on industrial expansion without consideration of human rights and the environment. As a result, environmental pollution was at its worst between about the 1960's and the 1970's. During this time industrial pollution practices resulted in the contamination of various areas of the environment and the appearance of various pollution-related diseases among the general public. Children were generally the very first victims of environmental damage. School teachers in polluted areas were so seriously concerned about this situation that they set out to protect their pupils and students from environmental pollution and to engage in education against environmental disruption. This is the beginning of environmental education in Japan and this particular type of education is referred to as "kogai kyoiku" in Japanese. "Kogai kyoiku" found the root causes of environmental disruption in the structures and processes of the dominant socio-

economic systems maintained primarily by corporate entities and administrative bodies which together sought greatly increased profits through the over-expansion of production, and the solution to it in changes in the economic infrastructure and the institutional superstructure of society.

In "kogai kyoiku", learning was inquiry-based, heuristic, community-based, and collaborative. Pupils and students engaged, under the auspices of their teachers, in active investigation and solutions of real-world environmental problems which occurred in their communities, in collaboration with their local people. They were encouraged to think critically and to see themselves, their histories and futures in new ways, which led to the development in them of a sense of their own power to shape their lives (Huckle, 1990). In short, "kogai kyoiku" was an instance of socially critical environmental education. In my presentation I will revisit "kogai kyoiku" to shed light on it in terms of educational innovation for sustainable development.

- Haw, Geoff. (Victorian Department of Education, Australia)

The Keys to Life Early Literacy Programme

The *Keys to Life Early Literacy Programme* is a widely-researched resource for students' success in early literacy achievement. Most students leaving their early years of schooling unable to read and write will make little gain in later years. *Keys to Life* provides a proactive solution. The essential components of good literacy practice used in *Keys to Life* are:

- Classroom literacy programme;
- Additional assistance for students who need it;
- Parent participation in their children's education; and
- Professional development for teachers.

Book 1, *Teaching Readers in the Early Years*, provides a structured approach to the classroom teaching of readers, identifying four stages of reading development: beginning, emergent, early and fluent. For the fewer students subsequently needing help, a section on *Additional Assistance* describes a pathway, which includes: identification strategies, establishment of home-school support groups, development of individual learning improvement plans, and a review process. Developing partnerships to improve student literacy learning is an integral part of *Keys to Life*. The *Parent Participation* section develops a plan for parent participation, including needs analysis, developing and implementing a plan, and monitoring mechanisms.

Book 2, *Professional Development for Teachers*, includes models which support early years teachers, focussing on whole school planning. The *Guided Reading* video demonstrates an approach whereby teachers encourage students to talk,

read and think their way through a text while assisting them to develop appropriate reading strategies.

Book 3, *Classroom Helpers*, supports the work of parents, helpers and aides in classrooms. Five interactive sessions linked to the classroom literacy programme are conducted by teachers. The *Reading Together* video demonstrates effective strategies for parents to use when reading with children.

Book 4, *Teaching Writers*, and Book 5, *Teaching Speakers and Listeners* are companion volumes currently being developed.

- Hui Tai Mei Har, Jessie. (Hong Kong Institute of Education, Hong Kong, China)

Pre-service Primary Teachers' Competence in Civic Education

The changeover of sovereignty in Hong Kong in 1997 has aroused people's increasing concern about the identity crisis of the youths as some recent surveys conducted by academics and journalists have shown that a majority of them tended to identify themselves as "Hongkongers" rather than nationals of the People's Republic of China. Some educators, government officials and local notables have begun to question of effectiveness of the civic education programme in Hong Kong. In response to such socio-political changes, I, as a member of the research team of the Department of Social Science, HKIEd, have adopted a quantitative method to conduct a survey on the teaching competence of the pre-service primary teachers in implementing civic education through the subject of General Studies. This instrument is also reinforced and supplemented by a semi-structured group interview to find out pre-service primary teachers' perceptions and understanding of civic education. The findings will be analyzed in order to evaluate the student teachers' competence in implementing civic education and identify their problems in terms of knowledge, skills and attitudes.

- Ignacio, Leonora. (Department of Education, Culture and Sports, Philippines)

Learn and Earn Project (LEP): A Major Non-formal Education Programme Area in the DECS, Division of Cavite, Philippines

The Philippines is noted for its high literacy rate. With the projected increase in population and the evident link between illiteracy and poor quality of life, the Non-formal Education sector exerts efforts to help achieve Education For All by the year 2000.

The vision of Non-formal Learn and Earn project, is to see a truly empowered Filipino citizenry, secure in its future in a rapidly changing global economy, aptly embodied in President Ridel V. Eames vision for Philippine 2000. The general

objective of the Learn and Earn Project is to strengthen the economy through sustainable entrepreneurship for prosperity and peace in the 21st century. The Learn and Earn project in the province of Cavite specifically has the following objectives: a) to increase the literacy rate by 1.5 per cent annually; (b) to improve the quality of life of illiterates in the province; c) to provide avenues for learning the 3 Rs and earning a living; d) to equip the NFE clientele with basic livelihood skills; e) to arouse the interest of illiterates to attend literacy classes and livelihood skills training through information dissemination; f) to equip the NFE clientele with basic knowledge on health, nutrition and value education; and g) to provide supplementary reading materials to enhance learning.

The Learn and Earn project is vital in dispensing new industries to the countryside and stimulating gainful employment. The project is more likely to be labor intensive and thus bring jobs wherever they mushroom. Through the Learn and Earn project, Non-formal Education has properly disseminated all developed technologies to the general public, utilizing user-friendly or reader friendly materials; and adopting indigenous technologies which are sustainable and environment friendly.

Within the period of five (5) years of the Learn and Earn project implementation in June 1997, it is hoped that benefits of Learn and Earn project will be extended to more than 14,000 NFE clientele in the province of Cavite. The Learn and Earn project is designed to inculcate self-reliance and self-help among the poor to enable them to participate effectively in productive activities, manage their limited resources and reduce their dependence on social welfare. In connection with the eradication of poverty and literacy, the Local Governmental Units and the Non-governmental Organizations support the projects and programmes of the Non-formal Education for the out-of-school-youth and adult beneficiaries in order that they may have a better quality of life.

- Ikramov, Alisher. (Uzbekistan National Commission for UNESCO)

Recent Educational Innovations in Uzbekistan

Since independence in 1991, the Government of Uzbekistan has taken numerous measures aimed at transforming the education system in order not only adapt it to the new social and economic environment, but also to change it into a dynamic factor for the country's structural development process. Many measures were taken on an ad-hoc basis, under the pressure of circumstance. It has become clear, that proliferation of reform measures is not suitable for well prepared reform and an efficient and effective reform process. The Government of Uzbekistan is now keenly aware of the need for such reform.

It is in this context that the Government is in the process of designing a strategy for the reform of education and training and for medium term (1998-2005) development of the education sector. The strategy is called the "National Programme for Personnel Training". Preparatory work began in mid-March and was completed by 1st July 1997. The strategy will (a) provide a coherent framework for the transition and transformation decisions taken since 1991, and (b) formulate objectives for sector reform and development.

- Im Koch, and George Taylor. (Ministry of Education, Youth and Sport, Cambodia)

Working For or Working With

The paper begins by outlining two models for development projects: the "FOR" model and the "WITH" model.

In the former the operational area of the project is ring-fenced using a number of structures:

- financial controls and budgeting,
- administrative procedures,
- professional activities,
- physical location, etc.

The effect of insulation from the routines of the host Ministry permits greater ease of operation, faster decision-making, financial accountability, physical convenience, etc., but at the cost of local ownership and sustainability. Donors and agencies work FOR the host institution. They will produce a product (e.g. a textbook), and often leave small groups of staff with high levels of skills.

Among the many disadvantages of this model however is the negative correlation between the effectiveness of training and the subsequent availability of trained staff to the host. Better trained staff have a higher market value. Alternatively large-scale training may be completed without techniques and procedures being integrated into existing systems.

The "WITH" model is characterised by:

- greater use of locally existing financial and budgeting systems, or by addressing these as a basic project activity,
- the mirroring, using or reactivating of host administrative procedures,
- the ensuring of physical proximity and availability of project staff to counterparts and potential colleagues,
- and "host-centred" professional activities which emphasise local ownership and carefully limit and structure the introduction of imported ideas.

The disadvantages of this model include the difficulty and length of time it takes to make local procedures explicit, their lack of transparency, and the level of indeterminacy acceptable to host institutions which may not be acceptable to time-bound, accountable projects. The model also emphasises the use of the local language and this inevitably limits the accessibility to outsiders of essential documentation, reports, participation in debates, plans. etc. The advantages include greater sustainability through local ownership and integration of procedures.

The new Secondary Inspection Office in the Ministry of Education is adapting several characteristics of the "WITH" model in its task of raising educational quality in schools. Previously school inspections were about control, correction and the reporting of information to the central Ministry. The new model aims to emphasise local empowerment, development of appropriate strategy, and the monitoring by schools of their own progress. The debate about what is meant by educational quality and what are the relevant indicators is beginning within the Inspection Office itself.

- IsHak, Samir T. (Social Fund for Development, Egypt)

Educational Innovation for Sustainable Development: The Contributions of the Social Fund For Development in Egypt

Social Funds For Development were not initially conceived* as educational institutions. Rather, they were to be transitory in duration and designed to achieve 'social goals' such as poverty alleviation, income distribution and gender empowerment. It was soon uncovered that at the roots of all these 'social ills', lack of education was the major culprit. The challenge in tackling the roots of the problem turned out to be daunting and required innovative techniques to pursue the two intertwining goals of sustainable development and continuing education.

The experience of the Social Fund For Development in Egypt is worth noting. SFD/Egypt is by the far the largest in scope of the existing some thirty funds. It is financed to the tune of US\$760 million in its second phase 1997-2000, following the successful completion of its first phase which invested US\$650 million financed by seventeen countries and international organizations. The SFD activities in the area of education contributed to the eradication of illiteracy of over 2 million citizens within four years and to enhancing the educational experience of thousands in trades and vocations which are needed for the labor market. The applied mechanisms and the techniques which the SFD introduced have received world wide acclaim for their innovation and pragmatism in a cost effective manner. The paper will first define the problems faced by the government and society; it will then elaborate on the different innovative approaches applied and assess their effectiveness, it will conclude with lessons learned for countries facing a similar situation.

- Ishizaka, Kazuo. (Japan)

Japanese Mass Education Versus Elitism: Challenges Facing Education Toward 21st Century

Education systems in the world can roughly be classified into three distinguished models:

1. Universalization Model; with an emphasis on mass education
2. Multi-line Model or Streaming Model
3. Super-Elitism Model

The current Japanese school education model belongs to model one, which was established during the post-war period between 1946 to 1950, implementing the United States single-line education model. Although Japan implemented the U.S. model, the teaching-learning practices of Japanese and the U.S. are different. Japanese education has been criticized as being too uniform, teacher-centered and having a uniform curriculum, while the U.S. education is open and flexible. The Japanese education system has been effective when Japan was trying to catch up on Western science and technology. The Japanese education system produced many stereotyped persons without any marked individuality, but now Japanese education is producing more individualistic and creative persons. This paper will analyse the Japanese school curricula (for elementary, and lower and upper secondary schools) of the national government, then describe the Japanese school curricula implemented by teachers, and finally, introduce school curricula actually attained by students.

Since Japanese educational reforms are under way, the paper will depict Japan's education outlook toward the 21st century. One of the main changes will be the shift from "Mass Education to Elitism" to meet the needs of future Japanese society and to predict Japan's curriculum toward the 21st Century.

- Kajornsini Boonreang, Jaitip Chuaratanaphong, and Thawat Siengluecha. (Kasetsart University, Thailand)

Creating a Local Curriculum in Dairy Farm Development in Ratchaburi Province

The objective of this study was to develop a process of creating a local curriculum for dairy farm development. The concentration in the study was on cooperation between schools, community and related organizations to provide authentic learning for students. Teachers used an integrated approach and student-centered teaching. Teachers encouraged students to construct their own knowledge. Students had an experience of cooperative learning, and developed a good attitude

toward the dairy farm occupation. The researchers used participatory action research by following these steps:

1. Undertaking a needs assessment of dairy farm development,
2. Developing a local curriculum for the fifth grade on Dairy Farm 1 and Dairy Farm 2,
3. Training the school administrators, teachers and supervisors on learning objectives analysis, cooperative learning, authentic integrated teaching and portfolio assessment,
4. Trying the local curriculum,
5. Implementing the improved local curriculum, and
6. Investigating the quality of the local curriculum by using achievement tests and portfolio assessment to check students' knowledge.

The research results indicated that:

1. The community, supervisors, school administrators, teachers and students at the elementary level felt they needed a local curriculum about dairy farm development more than other school levels (for example, secondary school).

2. By the end of the first semester in 1997, the teachers had changed their behavior in teaching, from teacher-centered to student-centered. They used an integrated approach and team teaching. The community had been involved in the learning-teaching process.

3. Students knew how to work as a team. They could present what they learned about Dairy Farm 1 either in front of the class or in front of the community. Their average achievement scores of Dairy Farm 1 was 54 per cent. Seventy per cent of students had achievement scores higher than 50 per cent. Finally they felt very happy to be studying in this course.

- Kajornsins, Samnao and others. (Kasetsart University, Thailand)

The Development of Student Volunteer Activity Models

The general purpose of this research was to develop student volunteer activity models. The specific purposes were: 1) to develop student volunteer activity models, and 2) to trial the student volunteer activity models.

The research findings for the research sub-project were: 1) There were four models of student volunteer camps, namely conservation camps, academic camps, construction camps, and combination camps. 2) Each model consisted of five student volunteer objectives, nine principles of student volunteer activities, three organizational departments, and five operational steps. All experts agreed that the student volunteer activity models were very suitable.

The results of the evaluation were: 1) It was very necessary to develop suitable student volunteer activity models to be used in colleges and universities in order to reduce the problems of student volunteer activities. 2) Both trial student volunteer camps had enough necessary resources such as personnel, money, material, and tools. 3) Students in both camps had organized the volunteer activities according to the developed student volunteer models. The quality of the activities were rated in the level of "very good" and "good". 4) The students viewed student volunteer activities as one of the most useful tools to promote student personality in the level of "more useful" and "most useful". The local people viewed the student volunteer activities as useful activities for them. They were very satisfied with the students' work.

- Kaloko, Abdul Aziz. (Universiti Brunei Darussalam)

Lesson from the Unreached: Utilizing Indigenous Knowledge in sustainable development among the Penan of Ulu Belait in Brunei Darussalam

Tropical rainforests provide a store house of potentially very useful plant species. However, knowledge of this vast resource potential is held collectively by the indigenous rain forest dwellers through the accumulation of experiences, informal experiments and an intimate understanding of their forest environment. This indigenous knowledge forms the basis of decision making in the sustainability of the forest environment. The Penan of Kampong Sukang in Brunei Darussalam, a traditionally hunter-gatherer indigenous group, has sustainably harvested and managed their natural resources without depleting their capacity to sustain the community and their generations. They have now been resettled into a permanent longhouse in the outskirts of their previous forest domain, but still survive from constant forages into the forest. Today, more than at any other time in human history, protection and preservation of the tropical forest biodiversity has become a priority for most governments throughout the world. The participation of the resettled Penan of Kampong Sukang in the maintenance of the rainforest ecosystem will provide a great opportunity for a people whose plant collection, management techniques and affinity to the forests, have always been ecologically sustainable.

This study has, therefore, used questionnaire surveys and interviews of rural Penan to examine the pattern of forest resource management through their perception of the forest, and the utilization of their *molong* concept of natural forest resource conservation. It is hoped that the study will provide more supporting evidence in the contemporary arguments for the incorporation of indigenous knowledge in the management of the forest environment.

- Kaptigau, Adani Joseph. (Agriculture and Livestock Department, Papua New Guinea)

Farmer Training as an Inducement to Functional Literacy and Sustainable Development

The objective of the Farmer Training Programme of PNG is rural education through functional literacy with perceived targeted skills outcomes while its vision is to effectively improve rural development. We must educate and empower people in social and economic self-sufficiency.

Assumptions and consideration to achieve this objective conclude the effective use of mass media; that we make continued efforts to prepare educative programmes, only that educative processes must be oriented to accommodate the learners needs. Farmer Training in Papua New Guinea is skills based. Papua New Guinea Farmer Training must know who the farmer is by answering: what is a farmer? can the farmer be trained? what do we train farmer for? how far can we train in 1) PRODUCTION SKILLS 2) MANAGEMENT SKILLS 3) BUSINESS SKILLS?

The three stated types of training are targeted for a specific individual or groups of farmers. The instructor in these types of training is identified as the Head Coach of a FARMING PRACTICING TEAM. The objectives are skills oriented and targeted to improving techniques and use of technological innovations and, equipment where necessary to improve productive results. There are no cultural inhibitors of creed, gender or age for participants in these training programmes. There are no exams to sit at the end of the course but equitable results in terms of producing a substantive result at the end of the course are sought.

Functional literacy will entice continuing education to create informed citizens, economic and social development, eradication of illiteracy and alleviation of poverty. Functional literacy must be the preferred educative model for "learning through out life" in the twenty-first century to eradicate illiteracy.

- Kem, Tilak R. (All India Council for Technical Education, India)

Educational Innovations for Reaching the Unreached

It is firmly believed that National Development and Educational Development are so inter-woven and inter-dependent that progress in the former can not be accomplished unless the later is addressed properly. In India, there is a vast network of educational institutions, but higher education can only be provided to nearly 7 million students of the vast youth population in India. The education infrastructure is almost on the brink of saturation and, perhaps, cannot be further extended for want of

funds at the disposal of Government of India as the priority for allocation of funds is towards the removal of illiteracy from among 50 per cent of India's population.

The education that developing nations desperately need, and constantly seek is the one which equalizes opportunities for the poor, the disadvantaged children and women in particular, and those living in rural and remote areas. The emergence of new technologies like satellite communication, Internet World-Wide-Web-Sites and the concept of virtual realities has dramatically enhanced educational capabilities. Through the use of new communication technologies, access to good educational programme can greatly be extended to large audiences in rural and remote areas with tremendous flexibility to access, retrieve and assimilate any desired subject material.

- Kemp, R.G., K.S. Bardon and M.A. Smith. (University of Hertfordshire, United Kingdom)

A UK Local Authority and University partnership to provide Environmental Training for the Small and Medium Enterprise (SME) Sector within a Local Agenda 21 Framework

Achieving sustainable development requires partnerships between many sections of society, including SMEs. Higher education and local government organizations have a responsibility to promote sustainability. Despite much enthusiastic activity in the UK, it has proved difficult to involve the SME sector. Raising awareness through education and training is one of the first steps to improved environmental performance and Local Authorities are well placed to help provide appropriate programmes in partnership with an institution of higher education.

The ENVIRONMATICs Project at Business Link Hertfordshire, backed by Hertfordshire County Council and the University of Hertfordshire, has attracted funding from the European Social Fund (ESF) ADAPT programme. The project forms an integral part of Hertfordshire's Local Agenda 21 framework and aims to respond directly to Chapter 36 of Agenda 21 which refers to the promotion of education, public awareness and training.

An environmental management training programme aimed specifically at the SME sector has been established and is integrated into other business training. The training course has been running since April 1996 and is currently recruiting a third cohort of participants. The success of the Project has been due largely to the partnership approach, embracing expert organizations, and thereby increasing the relevance and credibility of the training programme. The Project has proved important in the Local Agenda 21 context by demonstrating a practical and 'real world' approach to addressing issues concerned with sustainable development.

- Koencoro, Slamet. (17 Agustus 1945 Semarang University, Indonesia)

Error Analysis in Translation : An Explorative Study

This research aims to find out and to analyze language errors especially those grammatical and lexical made by the students of Akademi Bahasa 17 Agustus 1945 Semarang in making translation. The analysis of grammar errors is based on the use of grammatical elements in the sentences. The analysis of lexical errors is based on the usage of words and idioms. To collect the data, the writer administered translation tests from Indonesian into English and vice-versa to the students. The tests were given to a sample of 25 semester 5 students taken randomly out of 210 students of the Akademi Bahasa.

The error analysis was applied only to the sentences having language errors. The writer reconstructed the wrong sentences made by the students. By comparing the wrong sentences and the reconstructed ones, the writer can systematically identify, classify, and interpret those errors, and suggest some techniques to solve them.

The result of the analysis shows that the error appearing with the highest frequency in translating from Indonesian into English is grammatical (71 per cent), consisting of local errors (95 per cent) and global errors (5 per cent). These grammatical errors are mostly related to the use of inflection, word function, and concord. On the other hand, lexical errors are only 2 per cent consisting of local errors (94 per cent) and global errors (6 per cent). The result shows that the students made local errors more than global errors.

In translation from English into Indonesian, the highest frequency of lexical errors (89 per cent), consisted of global error (87 per cent) and local error (13 per cent), whereas grammatical errors were only 11 per cent, all of which were global errors.

- Leenothai, Penpimol. (Rajamangala Institute of Technology, Thailand)

Cooperative Apprenticeship Programme for Sustainable Development

Development should not only be restricted to economic growth, but also sustainable human progress. The challenge is to devise programmes to develop in students a broad understanding of professional capabilities, teamwork and interpersonal skills. In the context of technological change, educational institutions must be active with the work sector to obtain the right balance between the theoretical and the practical in the workplace. Business progress and the learning process must be closely linked. So corporate/college cooperation and the concept of cooperative learning should be the new expectation. Cooperation between educational institutions

and the private sector provides chances for students to enter the real world of work. Cooperative learning is an instructional technique in which students work together in groups towards a common goal.

This study presents some ideas on the apprenticeship programme by using the concept of cooperative learning and cooperation between campuses and educational institutions and the private sector. The new model is to bring students in different fields of study to work together on the apprenticeship programme. For example, students in different areas, such as accounting, marketing, financing, and so on, will work together on some cooperative apprenticeship programme. Students in the cooperative apprenticeship programmes will have the opportunity to develop their special talents, interests and some necessary social skills.

This study intends to confirm the importance of higher education outcomes. Cooperative learning through cooperative apprenticeship programmes will develop student competence, such as conceptual and technical competence in their professional areas; interpersonal communication; integrative and adaptive competence. These competencies are the prerequisite to sustainable human resource development.

- Leuterio, Florida C. (Divine World College of Calapan, Philippines)

Educational Innovation for Sustainable Mangyan Development

Excluding land security, education is the most immediate need expressed by the Mangyan indigenous leaders. Formerly isolated by the rugged mountainous interior of Southern Mindoro, lowland population pressures, land and resource competition; radios, contact with lowlanders, Christianization, etc. have forcefully united them with the global village. Numerous outside pressures are being inflicted upon them. For example, lowlanders have repeatedly shown Mangyans pieces of paper that purportedly entitled the holders to the Mangyans ancestral land. They, however, cannot read or write in Tagalog or English; consequently, they must accept in good faith the lowlanders' explanations of the papers. The Mangyans acknowledge that contemporary cultural viability necessitates a working knowledge of the surrounding world. While the Mangyans have learned much, the outside world still remains basically incomprehensible.

Among Mangyans who attended public schools and live in close lowland proximity, the traditional elders and Pundasyon's young leaders have observed a direct cause and effect relationship between school discrimination and resulting cultural debasement, and deprivation of cultural and personal pride, dignity, and confidence. Consequently, the elders and Pundasyon leaders do not want to subject their fellow community members and cultural heritage to the same education system. Rather, they desire a Mangyan-appropriate education that is responsive to their needs

and empathetic and respectful of the Mangyan culture in a changing world. Specifically, their expressed upland community development needs that will be addressed through the school are as follows: (1) functional literacy in education; (2) exposure to and comprehension of the larger world; (3) ecology and natural resource management; and (4) applied health and agricultural technologies. Since it is their community school, the Mangyans will be responsible for its maintenance and continued development. Through demonstration farms for improved upland agricultural techniques, the produce will be marketed to generate necessary school income. By year eight, the school will be self-sufficient from the harvests of demonstration fields. Moreover the communities' elders desire that the school produce prospective Mangyan parateachers for the establishment of schools in surrounding communities. This paper deals with a concrete response to that desire.

- Lo Joe, Teresa Chai, Jessie Hui and Po Sum Cho.
(See individual author entries for the respective abstracts) (Hong Kong Institute of Education, Hong Kong, China)

Teaching Competence of the Hong Kong Institute of Education Final Year Students in Civic Education

This is a research project conducted by four staff members of the Social Science Department at the Hong Kong Institute of Education on the implementation of civic education at tertiary level, using the Institute as a case study. It is meant to be a discussion panel so that international scholars could bandy ideas on the development of civic/citizenship education as a part of teacher education at tertiary level. All together, there are four papers that make up the panel. To start with, Mrs. Teresa Chai will review the development of civic education in Hong Kong. Then, Mrs. Jessie Hui and Mr. Po Sum Cho will analyze the findings on the teaching competence of the pre-service Social Studies teachers in Hong Kong in civic education. To round up, Dr. Joe Lo will review the existing civic education programme being offered by the HKIEd and explore remedies for the problems that could be identified in the findings. It is expected that the findings of the research project will not only enhance the teaching competence of pre-service teachers but also shed light on the sustainable development of civic education programmes for teacher education at the tertiary level.

- Lo, Joe Tin-yau. (Hong Kong Institute of Education, Hong Kong, China)

A Review of the Civic Education Programme for Teacher Education in Hong Kong

In general, the findings of the research project have shown that the pre-service teachers at the Hong Kong Institute of Education were not very competent in the implementation of civic education as embodied in the "Guidelines on Civic Education

in Schools" prepared by the Curriculum Development Council and issued by the Education Department of Hong Kong in 1996. Not that they lacked the skills in teaching, but they simply did not know how to transfer the skills into civic education both inside and outside the classrooms. Even worse, a majority of them revealed that they had not read the "Guidelines on Civic Education in Schools" and that they lacked the knowledge of Hong Kong, China and world affairs which are indispensable elements in pedagogical contents. Under such conditions, it would be inconceivable that the student-teachers could develop a positive and pro-active attitude towards civic education. By utilizing the method of documentary analysis and the approach of induction, this paper aims to identify the factors that have accounted for the deficiencies in civic education at tertiary level and explore the ways through which the pre-service teachers' competence and quality in such aspect could be enhanced. It is hoped that the suggested programmes or methods could help equip the pre-service teachers better for coping with the changes that have been taking place in Hong Kong and the challenges that the future world holds in store.

- Luksaneeyanawin, Sudaporn and Wiraman Niyomphol. (Chulalongkorn University and Mahidol University, Thailand)

The Application of the Thai-Text-to-Speech System for the Education of the Blind

The Linguistics Research Unit of the Department of Linguistics, Faculty of Arts, Chulalongkorn University has developed the first Thai-text-to-speech system call Chulalongkorn University Thai-text-to-speech (CUTES). It comprises 3 modules (1) The Thai Text Processing Module which converts strings of Thai letters into abstract phonological syllables (2) The Parsing Module which will analyse these abstract phonological syllables and represent them with a string of potential words with their phonological representation (3) The Synthesizing Module which consists of sound units ready to be called for a concatenation routine producing the speech of the string of words that are the output of the second module. The 3 modules of CUTES that were first developed as a software system, are now developed into an intelligent portable hardware unit called CUTalk. Two software systems have been developed for this application: (1) Chulalongkorn University Screenreader for the Blind (CUSCB) and Chulalongkorn University Text Editor for the Blind (CUTEB). CUSCB is a resident programme developed with the concept that it can be extended to work with the spreadsheet and data base programme working under DOS. CUTEB is a very simple text editor programme. However, it has been developed with the concept of bilinguality, i.e., it will read both Thai and English text using CUTalk together with other English Text-to-speech system.

This educational innovation will enable the blind to work, i.e., read, write and edit the Thai text from the computer. The system will allow the blind to study or work comfortably in the non-blind environment. It will also ease them to interact in

written form with the non-blind. This Thai Text-to-speech system can potentially be applied to any other platforms both software and hardware, for example, the electronic note taking devices, Braille printers, graphical user interface (GUI) environment etc. It is projected that this innovation will be widely adopted to accommodate the blind to study and work compatibly with the non-blind in any working environment.

- Mabunga, Ronald Allan S. (Philippine Normal University, Philippines)

Promoting Sustainable Development Through the Multicultural and Environmental Youth Immersion Programme

The paper presents an account of a programme in promoting sustainable development dubbed the "Tourism Earthsaving Cultural Immersion" programme. This activity was initiated by the Earthsavers Movement of the Philippines founded by a Philippine Senator, Hon. Heherson Alvarez, in coordination with the Philippine Normal University. The project is sponsored by the Department of Tourism. This project is a response to the recommendations gathered from education workshops at the 1996 Global Indigenous Cultural Olympics and Summit (GICOS) held in Manila early last year.

The paper enumerates the objectives of the programme as well as the activities involve in the project. This partnership for multiculturalism and environment aims to promote the cultural dimensions of sustainable development. Among the objectives cited in this paper are: (1) to promote cultural dimensions of development; (2) to reinforce and appreciate traditions maintaining peace and harmony with the earth; (3) to contribute to formulating multicultural curriculum for dignity-in-diversity, addressing needs, problems, and aspirations of all sectors of national society; (4) to begin forming partnerships between mainstream youth and indigenous people in caring for the future; and (5) to model a Filipino adaptation of the Human Heritage Volunteer Programme recommended by the World Commission on Culture and Development discussed at the GICOS. The programme immerses youth in indigenous traditions of caring for the earth, reverses marginalizing effects of inappropriate development, and supports the formulation of a new curriculum on sustainable development and multiculturalism. Further, the paper presents a discussion on the importance of the programme indicating that the project is designed to open a series of dialogues between disadvantaged youth of the cultural mainstream and an indigenous group of youths. As both sides try to understand their similarities and differences, bias, prejudice and misinformation will be reduced or eliminated. The intercultural sharing will enable them to develop strategies for partnership that will eventually promote balance, sustainability, and social justice in the policies and practices affecting the country's ecology, through dialogical encounter. Finally, the paper concludes with the key findings, as well as recommendations, of those who have participated in the immersion programme.

- Maclean, Douglas. (University of Melbourne, Australia)

Education for Sustainable Agricultural Development: A Case Study for Developing Effective Partnerships between Education, Agricultural Extension and Industry.

The Target 10 education programme for farmers is an example of a successful dairy industry extension programme conducted in Victoria, Australia. The programme was developed by the industry to provide sustainability in the present and future growth of the industry. The Victorian dairy industry has an ageing farmer population with less than 27 per cent of farmers having completed secondary schooling and only 3 per cent having an agricultural qualification at trade level or above. With the development of competency based training farmer organizations are realizing, more than ever, the importance of the knowledge and skills which are required to be a successful farmer. In addition, they are also seeking that competencies be documented through credentials which are often used as benchmarks by a mainly urban based population.

Target 10 has utilized two major philosophies in the development and delivery of programmes. The first is the empowerment of the industry, and in particular the dairy farmer, in shaping the outcomes and the processes involved in the delivery of programmes. This has occurred at both the strategic and tactical level where farmers are involved in planning the overall programme through to the details involved in the course delivery to a particular group of farmers. The second, is the use of adult education processes as its major methodology. The major programmes have incorporated accredited Technical and Further Education (TAFE) modules which allow direct articulation between Department of Agriculture extension programmes and the courses offered through the education sector. The overlap between extension outcomes and the learning outcomes of Technical and Further Education courses for farmers is not always absolute. The opportunity to contextualize and customize has provided the flexibility to respond to the actual rather than the perceived needs of dairy farmers and the rural community in general.

- Maglen, L. and S. Hopkins. (University of Melbourne, Australia)

An overview of Australia's bilateral assistance to the development of technical and vocational education in the Asian and Pacific regions, and a preliminary analysis of the Indonesian country programme

In the period of the 1980s and 90s Australia has accorded the development of TVE a high priority in its bilateral assistance programme to the Asia-Pacific region. This has arisen from the view that not only is TVE an essential underpinning of economic and social development, but that Australia has a particular expertise in this

field, and that it is in the interest of both the recipients and Australia's economic and strategic objectives with respect to its development assistance programme that it be given such a high priority.

This paper maps Australia's TVE aid programme in Asia and the Pacific over this period, and conducts a preliminary analysis of the programme in Indonesia, its major beneficiary.

- Manalo, Corazon S. (Department of Education, Culture and Sports, Philippines)

The Reading Proficiency Level of Out-of-School Youth and Adults Enrolled in Post Literacy Classes at the Manuel A. Roxas High School Non-formal Education Division of City Schools, Manila.

Introduction:

Reading is one means of obtaining ideas that cannot be transmitted orally. The individual who reads well has at his command "a means of widening his mental horizons and for multiplying his opportunities for experiences" (Brown et al, 1951) Thus, such knowledge of the past as recorded in books can be obtained primarily through reading.

Statement of the Problem:

This study was primarily undertaken to assess the reading proficiency level of 71 out-of-school youth and adults enrolled in post literacy classes and 150 first year in schoolers at Manuel A. Roxas High School, Manila. The study hypothesized that there is no muted difference in the reading proficiency levels of NFE learners enrolled in post literacy class and the first year in schooler. It also hypothesized that there is no significant difference between the pre-test and post-test performances of NFE trainees.

Summary of the Finding

On reading proficiency levels - at the beginning of the school year, the majority of the NFE trainees generally had a 1 to 4.9 reading level on primary reading level; on the other hand, most of the first year inschoolers had 5 to 7.9 reading level or intermediate grade level. Out-of-school youth and adult reading grade levels, after their training, obtained the second highest percentage of 59.15 per cent. Those in the college reading grade level category obtained the highest percentage of 23.95 per cent. The lowest percentage was obtained by the intermediate reading grade level of 16.9 per cent.

Following the Philippine Educational Placement Test (PEPT), of the 71 NFE trainees who took the PEPT, 56 were accredited in a higher grade level than when they left school, thirteen were retained in the grade level they were in when they stopped schooling. Only two were demoted.

Conclusion:

In the light of the foregoing findings, the following conclusions were derived:

1. NFE learners were not as proficient as the first year inschoolers at the beginning of the year.
2. NFE learners acquired the necessary reading skills and competencies, both oral and written, after the NFE training.
3. Accreditation of the NFE trainee could be attributed to the development of their reading skills in NFE post literacy training.
4. Evidently, NFE training is effective in improving the reading proficiency of NFE trainees.

- Manalo, Oscar Suarez. (Department of Education, Culture and Sports, Philippines)

Sustainable Development Programme for Clientele of Region IV Southern Tagalog Region - Philippines

Region IV - the biggest among the seventeen (17) regions - has a total land area of 46,924 sq. km. or approximately 16 per cent of Philippines total land area. Being a premier region, it is unique since it is composed of mainland, city and island divisions which have several tribal groups/cultural minorities. There is a big gap between simple literacy and functional literacy rates. Island provinces have low participation rates which explains the low simple and functional literacy rates. Other factors that affect the degree of literacy are the geographical location, the peace and order situation, socio-economic problems, health problems and migration of people from lahar devastated areas that contribute to the swelling of the illiterate population. Many in-school children dropout after completing Grade IV and remain unproductive and vulnerable to vices. Some are forced to enter the world of work and add to the number of child laborers.

In this situation, strategies to improve the quality of the delivery of NFE services of different age and clientele groups were implemented. They organized a coordinated and efficient NFE mechanism at all levels, instituted active advocacy and social mobilization, organized needs/community-based projects put up NFE MIS (barangay to division) established NFE training centers and community reading centers upgraded curriculum for every level and group using indigeneous materials, integrated positive virtues relevant to NFE activities and monitored and evaluated NFE programmes and projects regularly and periodically.

Implementing the following strategies we achieved several accomplishments. A total of 111 Literacy Service Contracting Scheme classes were organized and 1,163 enrolees graduated. With regard to Literacy cum Livelihood classes, 573 were organized and 6,954 enrolees graduated. Literacy mapping was conducted with ADB and non-ADB divisions to find out the literacy level of the learners.

- Mangubhai, Francis. (The University of Southern Queensland, Australia)

How can chapatti be transformed into bread? Or how sustainable innovation can founder on the rock of established practices

This paper is based on the axiom that innovations are sustainable only if they evolve or are grafted on to the root stock of current practices of a society. Innovative educational practices must therefore either evolve - and sometimes this may be judged to take too long and efforts are made to short-circuit the procedure - or be built upon discernible commonalities between current practices (and capacities) and the new practices that are planned to be introduced. The paper examines the claims made above by reference to a case study of second language curriculum development in a South Pacific country, and to a similar type of innovation in the teaching of foreign languages promulgated in Australia. In both cases, it can be said that a more evolutionary approach might have led to a greater success in the achievement of the goals of the two innovations.

- Manoosawet, Chalermchai. (Yonok College, Thailand)

Volunteer Project: Service Learning for Sustainable Development

The purpose of study in Higher Education is to develop students in intellectual, academic, and the moral and ethical aspects, so that they will be able to contribute to the development of their community, their country, and themselves, to the fullest capacity. The Thai educational administration structure is generally composed of two divisions, Academic Affairs and Students Affairs. This present structure is unfortunately not conducive to the balanced improvement of both divisions.

"Service Learning" as a teaching methodology has recently emerged in the United States as a part of the school reform movement, integrated with the ideas of teacher as facilitators, active student learning, reflective teaching and connections with real life situations. Every service project has built into it the "ethic of service". "Service Learning" is an integration of academic and students activities through community service, as a tool in accomplishing the objectives set in all subjects or programmes.

This study used a "Volunteer Project" which attracted a lot of students as the programme did not have sufficient assistance from academic affairs and the faculty. The experiments of Service Learning, based on various theories and research studies is aimed at the graduates to develop their family, community, and society. The main purpose of this study is to develop a guideline of service-learning as a vehicle for the attainment of student development and thereby to contribute to sustainable development.

- Masujima, Emiko, Haruhiko Tanaka, Heakyung Kim and Hiroshi Ochiai. (Hiroshima University, Japan)

The Evaluation of a Module for Teacher Training on Environmental Education

This study involves the trial and evaluation of a module entitled "The Nature and Objectives of Environmental Education" which was introduced in a workshop on "Learning for a Sustainable Environmental Education: Innovations in Teacher Education Through Environmental Education" held in Pattaya, Thailand in 1995 sponsored by UNESCO-ACEID.

In order to use this workshop module as material for classes in Japan, we revised (modified and shortened) the module as follows:

1. In order to adopt in the normal class period of 90 minutes, the prototype workshop module was shortened.
2. Some of the original questions in an "EC" game activity were replaced by those related to the scientific knowledge on environmental problems.
3. In the "Windows on 7 lessons" activity, eleven imaginary lessons were distributed.
4. The "Co-operative Cards" game activity was excluded.
5. In order to maximize time, we assigned some class activities for homework.

The total number of students who participated in the trial was 154, all from the Faculty of School Education Hiroshima University. The results indicated generally, the students' responses as satisfactory, showing a positive evaluation of the trial. It was recognized that there is an increasing necessity to introduce EE in schools, particularly at the early stage of school education and emphasize EE for pre-service and in-service teacher training programmes.

- Masujima, Emiko and Haruhiko Tanaka. (Hiroshima University, Japan)

Educational Reforms in Japan - Within the Framework of Environmental Education

In Japan, it has been rather difficult to implement comprehensive environmental education (EE) in schools because of existing Courses of Study prescribed by the Ministry of Education requiring every subject to be taught within the framework. On the brink of the 21st century, there is more debate and discussion than ever before regarding the future state of education. One of the points which has been raised is on educational responsiveness to societal changes resulting from internationalization, the information explosion, advances in scientific technology and environmental degradation. To cope with this point, a new learning area on "Integrated Learning" is to be implemented in the next revised version of Courses of Study. In the new area, classes of comprehensive EE, for example, will be given. To this end, teachers of each subject must share and strive to undertake innovations in EE. These actions require that teachers recognize multi-faceted EE, which needs various professional skills to be able to teach more effectively and strictly to imbibe the aim of Sustainable Development in consideration of living in harmony with the environment. Recognizing that the achievement of objectives of EE depends on teachers, some measures to improve the competence and capabilities of teachers, e.g., through a variety of in-service training programmes, are being taken by the Ministry of Education and Municipal Boards of Education. We note that it is also important to develop teaching materials suitable for the above comprehensive EE. We will explain several teaching modules on EE, which we have lately developed. Also, we will discuss the results of our recent survey on the present and future status of EE in Japan, for which the respondents were secondary school science teachers.

- McKenna, R. and M. Brueckner. (Edith Cowan University, Australia)

Paradigms for a Changing Context: The Challenge of Interdisciplinary Co-operation in Management Education

The aim of this paper is to encourage the development of learning contexts in management education. For this, emphasis is placed on the importance of culture and collaboration with ecology, ethics and other non-traditional disciplines for business students.

This study highlights the need for change in both the curriculum and the administrative structures of business schools. This is due to the failure of the learning context typical of business schools world-wide to meet the needs of students, the community and the wider natural systems of which business is a part. Current business curricula are inappropriate for learning about the complexities of business, business organizations and their environment. Therefore, business schools need to

shift away from traditional learning paradigms that are resistant to cross-discipline collaboration and explicit incorporation of values towards paradigms of co-operation. This need for change can be demonstrated by the absence of environmental courses in most business curricula despite increasing public concern for the environment and pending ecological crises. This study attributes the disinclination of business schools to welcome new-fangled ideas to the dominance of the economics paradigm, and the existing specialist structures within higher education. It is suggested that higher education can no longer afford to continue its specialist structures, but should encourage more interdisciplinary and integrative approaches as well as overcome the dominance of economic rationalism.

The widespread belief that the term "business ethics" is an oxymoron is an ethical dilemma for business science. Key assumptions that are embedded in the rationale of conventional economics require re-conceptualization to allow the inculcation of fundamental moral values and recognition of the various stakeholders of organizations, including future generations. University graduates are the potential leaders of society in the future. Their success will depend on their development of an open attitude, requisite knowledge and public sense to discharge their responsibilities in the interest of society and the environment. Management education should facilitate and encourage such development.

- McLaughlin, Denis. (Australian Catholic University, Australia)

Teacher Education : Key for Sustainable Development in Education in Developing Countries

Improving the quality of education in a developing country is often the responsibility of those who are in teacher education. Such academics, often expatriates, have frustrated qualitative change by their uncritical promotion of western educational innovations. It is argued that an appreciation of the complex educational context by academics is more likely to promote qualitative change. The context of the impact of school teaching and the experience of higher education in Papua New Guinea is explored by scrutinising cultural perspectives, the medium of instruction and the higher education experience of teachers. Such scrutiny can become the bases for relevant policies to improve sustainability in teacher education and the education system in general.

- Miller, Danielle. (The GLOBE Programme, U.S.A.)

The role of the GLOBE Programme in hands-on science, environmental education and technology in the classroom

Global Learning and Observations to Benefit the Environment (GLOBE) is a worldwide network of students, teachers, and scientists working together to study and

understand the global environment. Currently, there are over 4,000 GLOBE Schools in 59 countries. Through the initiation of GLOBE activities, schools and environmental education centers in both developed and developing countries are achieving the goals of the GLOBE Programme: to enhance environmental awareness, increase student achievement in math and science and contribute to the scientific understanding of the Earth. Under the GLOBE Programme, students made a core set of environmental observations at or near their schools and report their data either via e-mail, the World Wide Web or on paper. Scientists use GLOBE data in their research and provide feedback to the students to enrich their science education. Each day, images created from the GLOBE student data sets are made available by e-mail and posted on the World Wide Web, allowing students to visualize their environmental observations and those of other students all over the world. Through this regular monitoring of their local environment, sharing data with GLOBE scientists and students in other countries and participation in learning activities closely linked with the scientific measurements, students develop a sense of stewardship for the Earth. In addition, the scientific protocols and learning activities require a full understanding of science and math principles and the application of these concepts, increasing student familiarity and comfort with science and mathematics. Evaluations of the GLOBE Programme have shown that GLOBE students are more likely to consider a career in science because of their hands-on science experiences in the GLOBE Programme. GLOBE science and education teams utilize GLOBE Student Data in their research on a wide range of science disciplines including atmosphere/climate, hydrology, soils, GPS, and land cover/biology. In addition to being used by the GLOBE Science and Education teams, GLOBE Student Data is archived and made available to scientists worldwide on the GLOBE Server.

- Min, Moo-Suk. (Korean Women's Development Institute, Republic of Korea)

A Study on Promoting Women Teachers to Educational Administrators

This study analyzed the barriers to the advancement of Korean women teachers into educational administrators and explored the policy measures for eliminating these barriers. Three research methods were utilized as follows: (1) the status of women teachers and educational policies related to the promotion of women teachers were analyzed; (2) a survey of 942 elementary teachers and 415 educational administrators was conducted with a well-structured questionnaire; and (3) intensive interviews with 17 women teachers and principals were conducted.

From the analysis of the statistical data and responses from the questionnaire, it was found that although the number of female teachers has increased rapidly since 1965 in Korea, few of them are in decision-making positions at every educational level. Four major barriers to promotion were discovered in the analysis: (1) individual factors relating to female teachers such as a deficiency in ambition or

efforts to be promoted; (2) problems caused by the promotion and transfer system of teachers; (3) the traditional prejudices which prefer male teachers as most school principals; and (4) the social structure related to women's double role as housewives as well as professional job-holders.

- Mohaiadin, Jamaludin. (Universiti Sains Malaysia, Malaysia)

The Use of Video Teleconferencing in Distance Education: Issues, Problems and Recommendations

As we enter the new era of computer and information technology, Malaysia as a new industrialized nation has adopted Vision 2020 as its inspiring factor, thus prompting the Malaysian education system to adopt many innovative approaches to achieve its goals. Public universities are now looking into new ventures to provide wider access to quality education for more Malaysians. A new challenge is also seen ahead as more private institutions provide twinning programmes with foreign countries. The Science University of Malaysia, the pioneer in distance education programme in Malaysia, has geared up to face this new challenge. Using the latest technology of video teleconferencing, degree programmes in education, science, social science, humanities, management and engineering are offered to working professionals and also to those who are unable to pay a high cost to be full-time students. With the advancement of this new technology, a total of 1361 students have registered for the 1997/1998 academic year bringing to a total of 4097 the number of students in the programme. To supplement video conferencing, the use of the Internet and USMNet is getting wider support. The concept of the virtual library of USM is in the making. This would mean that the boundaries of time, geographical location and space are no longer seen as the limiting factors for students to obtain access to information for research and other academic exercises. In implementing this new approach to reach out to more students nation-wide, several problems have been encountered. Among those are the psychological impact on students' preparedness to adopt this innovation in learning, physical facilities, the learning environment and technology breakdowns. These problems need to be addressed and taken seriously. Recommendations are provided to overcome these problems.

- Mohandas, N.K. (Ministry of Education, India)

Reaching the Unreached

The District Primary Education Programme is a bold initiative to bring about qualitative change in the Primary Education scenario throughout the country. The programme has been successful in bringing about holistic changes in the curriculum, textbooks, infrastructural facilities (i.e., child friendly classrooms), etc. Special emphasis has been given to alternative education, special education, education for

girls and adult education. One of the flexible and innovative strategies adopted to reach the highly remote and inaccessible areas is starting multi-grade schools.

In my paper I detail how such a programme of starting multi-grade schools was taken up and implemented. The paper is conceived as an empirical study on how a separate learning package was evolved, how teaching-learning materials were prepared and how eco-friendly, child-friendly structures were designed and how some of the pitfalls of earlier programmes were rectified. The whole programme was a challenge right from the identification of the sites. The uniqueness of the programme was the careful selection of a local person as a teacher and the intensive training imparted to them. The programme took education to the geographically isolated areas with small and scattered populations with the complete participation of the local community and became the converging point for all developmental agencies and activities.

- Mortensen, Lynn L. (President's Council on Sustainable Development, U.S.A.)

Education for Sustainability in the United States: Moving from Policy to Action

The publication "Education for Sustainability: An Agenda for Action" was the result of nation-wide involvement in recommending a framework for action. Implementing the recommendations in the agenda is the task at hand. Examining the factors that enable and those that impede progress will be discussed. Particular initiatives, such as the sustainable development extension network, and the state capacity building process, will be featured as examples. Copies of the agenda will be available.

- Nagai, Yasuko. (Summer Institute of Linguistics, Papua New Guinea)

Developing a Community-based Vernacular School: A Case Study of the Maiwala Elementary School in Milner Bay Province, Papua New Guinea

In Papua New Guinea (PNG), Western education was first introduced by various missions. Then it was developed by expatriate staff members of missions and colonial government. Thus Western values have been reflected in curriculum and pedagogy, especially through teaching in English. As a consequence, this Western education has caused children to become alienated from their community. In order to eliminate the problem, vernacular education has been promoted in recent years. Values of indigenous culture are also recognized in the curriculum in order to make school more relevant to the local culture. However, many of these changes have also been introduced by expatriates - from their point of view. Although indigenous people were invited from time to time to contribute their ideas, they have not been the main curriculum developers. This paper presents a breakthrough in the transition from the process of the expatriate-centred approach towards the

development of indigenous education. In this study, indigenous people were empowered to take an active role in the establishment of their vernacular elementary school. Through the process of Participatory Action Research (PAR), they were able to express their innovative ideas and to become responsible for their decisions and actions, while an expatriate played the role of facilitator and catalyst. As a result, indigenous people were able to syncretise Western values and indigenous values successfully in their vernacular elementary school.

- Nagayo, Jose P. (Philippine Women's University, Philippines)

Imperatives of Education in Philippine Strategy for Sustainable Development

Education plays a crucial role in the country's effort at sustainable development. In fact, not only must this concern be primordial for a specific country or sector, it must be the primary concern of the entire educational system because we cannot hope to change the attitudes and values of people in a short period of time.

The World Commission on Environment and Development (WCED) defines sustainable as "meeting the needs of the present generation without compromising the ability of future generations to meet their own needs." Philippine Agenda 21 recognizes the main players for sustainable development of national realities, as the

- economy, where the key actors are business and industry;
- polity, where the actor is the government; and
- culture, where the key actor is the civil society.

The clustering can be shown as:

<u>SD Realm</u>	<u>Cluster of Discipline</u>	<u>Strategy</u>
Economy	Business, Agriculture, Fisheries, Information Technology Engineering, Architecture, Marine	Social Mobilization Partnership Business
Polity	Legal, Humanities, Social Science, Economics Communication	Funding and legislative agenda
Culture	Husocom, Teacher Education, Health, Science, Mathematics	Advocacy, Policy, Social marketing, extensions and non-formal education

Integration of Sustainable Development in the Education Curricula with units in basic education, general education and tertiary and specialized levels.

- Nontapantawat, Vina. (Ministry of Education, Thailand)

Development Research on "School Staffs' Development Model"

The purpose of this research was to study the school staffs' development model in four subject departments in the secondary schools under the Department of General Education's jurisdiction. These four subjects departments were English, Thai, Mathematics and Science. The samples of this research were from 22 secondary schools comprising 10 secondary schools in metropolitan Bangkok, 11 secondary schools in educational region 11, and 6 secondary schools under The Patronage of His Royal Highness, The Crown Prince.

The research instruments comprised academic documents, questionnaires, and inventories. The data were analysed by using percentages, means, and standard deviations. The research results were:

1. The opinions from the assistants of the school administrators after implementation were of the high level ($X = 3.76$) which was higher than that before the implementation.
 2. The opinions of the subject department heads towards self-evaluation after implementation were of a high level (X between 3.38-3.68) which was higher than that before the implementation.
 3. The opinions of the students towards teaching behaviors were of the level (X between 3.59-3.81) which was higher than that before implementation.
- Perez-Dominguez, Servando and Naz Rassool. (University of Santiago of Compostela, Spain and University of Reading, United Kingdom)

Development for Whom? The Role of Communities in Sustainable Development

The Conference in June 1992 in Rio de Janeiro (Brazil) confirmed the basic principle of eco-development or "sustainable development". It states that any kind of development, in order to be named "sustainable" should have social justice as a main objective, at the same time showing respect for the environment and aiming for economic efficiency. However, we must bear in mind that respect for the environment and economic efficiency should never be the be all and end all. In this sense, the writers share the thinking of the historian Joseph Ki-Zerbo when he points out that the human being should always come first.

The purpose of this paper is to offer reflections on the role of communities. No concrete solutions can be given to this complex and multifaceted issue in a paper, but it is hoped that both the reflections and doubts set out will give way to further productive debate. The viability of sustainable development still carries a question mark. To speak about development when many people in Third World countries can

hardly survive each day, may seem to be a paradox. It is also clear that the mimetic reproduction of models taken from industrialized countries has not normally work. On many occasions the "adaptations" created a greater imbalance, a "bad development" that has been beneficial only to a minority (in many cases the least needy).

Aminaa Traore, female and born in Mali, one of the poorest countries in the world, noted that the word development has no translation in the different languages of Africa. It is, on the contrary an imported theoretical idea, which has marked the individual and collective fate of African people, and that has also generated surrealistic situations. The writers believe that : (1) the communities, and not just the politicians and experts in the different fields (including education), are the ones who have to be aware of their challenges to really achieve sustainable development which, progressively, could help them to change structural inequalities, so to improve their individual and collective future. The role of politicians and experts should be one of facilitators; (2) The plausibility of sustainable development has, as a prerequisite, the installation and deepening of democratic governments.

- Peshkov, Serguei I. (International Center of Educational Systems, Russian Federation)

Integrated Interdisciplinary Training of Expert Teams for Sustainable Development of Regions

For the last six years the problems of education and training for sustainable development and ecological safety in industrial and other areas have been in the focus of International Centre of Educational Systems (ICES) activities. In the past years, ICES fulfilled a UNESCO/ICES programme in holding a series of international and national seminars on policies and strategies of waste management, impact assessment and risk analysis, particularly school-seminars for the UNEP/UNIDO/IAEA/WHO International Risk Project.

One of the main lessons learned from school-seminars is the inadequate use of integrated aerospace, ground and underground research for rational and sustainable natural use. Natural resource monitoring has an acute shortage of highly skilled experts. There are practically no experts on integrated aerospace and ground monitoring. Industrial decision-makers and local authorities are also unprepared to use such data for ecoinformation and nature resource support for integrated studies at concrete areas. Another serious shortback is sector disintegration in administration. Hence investment, designing and administrative decisions are based on insufficient and unreliable data, while their implementation causes negative economic and environmental impacts.

With this in view the ICES Department on "Aerospaceecology" summarized the experience in training and retraining at the leading Russian universities and colleges and jointly with the Gagarin Cosmonauts Training Centre worked out a new multi and transdisciplinary curriculum for specialist training based on a system-wide and regional approach. Simultaneous retraining of experts of various specialities, advanced training of decision-makers and specialized training of astronauts was considered the most effective. The training process is being constantly improved in close co-operation with regions taking into account their problems and requests and using the experience accumulated by international organizations.

The ICES curriculum is an example of an innovative practice for reorienting formal education toward sustainability and investing in education as a contribution to a sustainable economy.

- Phommabouth, Chandy. (Ministry of Education, Lao PDR)

Innovation in Education-Management of the Integrated Education Programme in Lao PDR

The national goal of basic education for all Lao children includes access to education for disabled children through integration in local schools. This is a new development for Lao PDR as it is for other countries in the region. Following experimentation in one primary school from 1993 to 1995, the programme has now expanded to 34 primary and pre-schools in four provinces and provides for over 200 children with special educational needs.

The success of the programme is related to the adoption of a suitable policy and management system which is appropriate to the Lao situation. Seven aspects are identifiable:

- carefully planned expansion based on the capacities at provincial and central levels;
- controlling the difficulty for new schools through careful recruitment in the early stages;
- training for administrators and teachers which includes both general and special teaching and management skills;
- strong monitoring and support for schools in the programme;
- a clear management structure at each level;
- the building of good cooperation between schools, families and local communities and between education and health services, particularly with national and provincial rehabilitation services; and
- regular evaluation from the national implementation team so that planning is informed.

The programme is supported by SCF(UK) and through grants from UNICEF and UNESCO. Costs have been kept low so as to ensure sustainable development and continued expansion. The Ministry of Education will continue to need international aid and will seek further funds to help in the task of spreading integration throughout the country.

- Pia, Zenaida P. (Polytechnic University of the Philippines)

Educational Innovation for Sustainable Development: Philippine Setting

In the Philippines, education is one of the priorities of government because it believes that adequate education is universally recognized as a necessary component of economic advancement and, therefore, must be assigned the highest budgetary priority. Education accelerates social, progress and promotes total human liberation and development. Education shall be geared towards the pursuit of a better quality of life for all by emphasizing the formation of skills and knowledge necessary to make the individual a productive member of society and accelerate the development of high level professionals who will search after new knowledge, instruct the young and provide leadership in the various fields required by a dynamic and self sustaining economy. Education shall likewise be used to harness the productive capacity of the country's human resource base towards international competitiveness. Education can produce in a person the ability to create, think critically, act positively and contribute to the full development of the family, community and the larger society.

As a mission statement of the Philippine Educational System, the government shall provide quality basic education that is equitably accessible to lay the foundation for holistic life learning through critical and creative thinking. The ultimate aim of this education is to develop Filipinos into functionally literate, economically secure, socially and morally responsible, and nationalistic citizens who will contribute to, as well as benefit from, positive global development.

- Piracha, Awais Latif. (Asian Institute of Technology, Thailand)

Educating for Sustainable Development: A Spring Experience

Special Planning for Regions in Growing Economies (Spring) is a professional, post graduate programme on Regional Development Planning and Management, jointly offered by the University of Dortmund, Germany, and the Asian Institute of Technology (AIT), Bangkok. The Programme at the University of Dortmund concentrates on development theories, planning strategies and methods. SPRING courses at the AIT stress the application of that knowledge and skills. The major instruments are field studies with the objective to develop plans and programmes for the regions.

A SPRING graduate-planning workshop at the Asian Institute of Technology, with seven international participants, took place from December 1995 to March 1996, using Khlung District, Chanthaburi Province, Thailand as a case study. The purpose of the exercise was to understand the governing principles of important Natural Resources and Environmental Management (NREM) issues and to apply the same to analyse the study area, Khlung, and to come up with recommendations for sustainable development.

The study approach aimed to be both educational for the institutional participants; and relevant to the given conditions in Thailand. The study area as well as the researchers were divided into two; one group took care of the upland and the second the lowland. For both groups the planning procedure consisted of problem elaboration using a problem structure diagram, formulation of options, evaluation of options using a weighted criterion technique and stakeholders' analysis, and plan of action for improvement as a logical framework.

Watershed degradation, caused by deforestation, poor land management, and soil erosion from unrehabilitated gem mines, was identified as the main problem in the upland. Main problems identified in the lowland included, loss of bio-diversity, shrimp disease, and reduction in fish catch. Problems in the lowland seemed to stem from the clearing of mangrove forests for shrimp ponds. Based on the above mentioned analysis, two sets of recommendations were made for improvement in NREM in the upland and the lowland.

- Po, S.C. (Hong Kong Institute of Education, Hong Kong, China)

Pre-service Secondary Teachers' Competence in Civic Education

In the transitional period, there has been a general concern among Hong Kong people that our young citizens are not adequately prepared for the reunification of Hong Kong with China. They demanded a more effective civic education programme in both primary and secondary schools. There are different modes of implementation of civic education in the Hong Kong secondary schools. In the formal curriculum, civic education is mainly carried out through the subjects of Social Studies or Economics and Public Affairs. This paper identifies teachers' competence as a major factor which determines the effectiveness of the civic education programme and evaluates the competence of pre-service secondary Social Studies teachers in implementing civic education through the teaching of the subject of Social Studies. The research project mainly adopted a quantitative method. Through the instrument of questionnaires, student teachers were required to conduct self-evaluation of their competence in implementing civic education in secondary schools. At the same time, this instrument is supplemented by a semi-structured group interview on the student teachers' understanding and perception of civic education. The findings show that final year student teachers of Social Studies are, in general, not well equipped in both

knowledge and skills in implementing civic education in secondary schools. The findings are thoroughly analyzed and their implications for teacher education discussed.

- Rajchaprasit, Juthamas. (Hill Area Development Foundation, Thailand)

Education Programme for Adults at a Hill Tribe Village in the Time of Change

Objective:

1. To promote education as a tool for learning process in a hill tribe community which leads to human resource development.
2. To strengthen people to be involved in highland development, in cooperation with others agencies.
3. To encourage people at the village level to interact in education programmes.

The process:

HADF staff, as the facilitator, encouraged and organized the forum for the participants to discuss issues in the mainstream of attention; environmental preservation, cultural expectations, reafforestation, etc., in the village. The different target group were elders-men and women, youths and students. The facilitators had been trained as trainers to collect the ideas from the people and to develop the curriculum at the end, in order that participants could express their ideas and think openly. In using this method, HADF staff can learn about the way of life participants who can also learn information from outside, learn to know each other, learn to know the facilitators. This process is useful for sustainable development and human resource development.

- Rassool, Naz. (University of Reading, U.K.)

Developing Communicative Competence for Democratic Participation in the Information Society

Locating the material basis of the information society, the paper argues that, in an era in which information technology is seen as underscoring both cultural and economic development, we need to define the concept of information concretely in terms of its cultural, technological and economic applications - and their relative use to both societal and individual development. The underlying argument is that the concept of what is useful information needs to be subjected to further scrutiny with regard to the comparative value attached to different forms of knowledge within the culture. In particular, it explores the global dimensions of information technology and the implications of this for the conceptualization of literacy. It argues that within

a world undergoing fundamental social, cultural and economic transformation largely as a result of the impact of information technology, the concept of communicative competence increasingly defines our possibilities to participate effectively as workers, consumers and citizens. Within a context in which discursive sets of meanings traverse the social terrain, personal efficacy and, relatedly, social development are now more than ever, reliant on having a substantive basis of social, cultural, technological, scientific and political knowledge. Moreover, the dynamic nature of the interaction taking place through the facilities offered by information technology requires flexibility in terms of the ability to adjust to, and participate in different discourses. Levels of communicative competence therefore influence the extent to which people can participate in the democratic process. The paper provides a set of guidelines to frame a re-conceptualized view of technological literacy/capability that includes the different communicative skills, knowledge and awarenesses needed to (a) participate effectively in the information society, and (b) those required to participate meaningfully in the democratic process within a global cultural economy.

- Ren, Changsong. (Curriculum and Teaching Materials Research Institute, China)

Curriculum and Teaching Materials Innovation for Sustainable Development

1. The variables which influence the social sustainable development in China are:
 - ★ the quantity and quality of the population,
 - ★ the ecological environment,
 - ★ natural resources,
 - ★ science and technology, and
 - ★ the social spiritual civilization.
2. The response of curriculum and teaching materials to the strategy of Chinese social sustainable development has been:
 - 1) In order to improve the quality of the people of a nation, the direction of the recent innovation of curriculum and teaching materials is to improve the development of the qualities of students in every aspect but not only the ability to cope with examinations.
 - 2) We teach the concept of sustainable development directly or by examples in our textbooks, especially in the subjects of Chinese, Social Studies, Natural Science, Physics, Chemistry, Biology and Geography.

For example, a text in Chinese textbooks tells that: There was a village in a mountainous area, and there were lots of trees there. The people in the village used the trees to do everything: to build their houses, to make furniture, to warm themselves by fire, and etc. For there were so many trees

in the mountains, they never thought about protecting trees. Years after years, trees in the mountains became less and less. One year, the village had heavy rain. Three days later, the village disappeared. And the houses disappeared. The furniture disappeared, too. In fact, everything made of wood disappeared. And the trees in the mountains disappeared, too.

- 3) To improve the student's ability in sustainable development is very important to the social sustainable development. So we pay attention to innovation in the aspects below:

- ★ attach importance to the basis of each subject,
- ★ pay more attention to the learning ability of students, and
- ★ promote the modernization of the content of each subject.

- Reyes, Enrica S. (Commission on Higher Education, Philippines)

Educational Innovation on Higher Education for Sustainable Development

With the emerging and worsening problems besetting the world like global warming, destruction of the ozone layer, environmental degradation, pollution, increasing poverty, etc., countries are alarmed that the future of the next generation be eroded. Policy makers seemed to have forgotten that many of the world's resources are depleted and no longer replaced. With the rise of prosperity and technological advancement, is the existence of high ecological costs, the widening gap between agriculture and industry, and the increasing inequality in income distribution, the concept of development has been magnified so as not to include only economic growth. The world commission on environment and development described sustainable development as "not a fixed state of harmony, but rather, a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with future as well as present needs... compromising the ability of future generations to meet their own needs."

Innovation is a means by which a country today can gain competitive advantage. It is not just composed of activities but it is a kind of a "Mindset". There must be the belief, the determination and the optimism to come out with something new. Hence, this "Mindset" must evolve first in order to come out with novel ideas, strategies and practices.

In the field of education, innovation should not only be undertaken to move a country ahead of the industry pack, but to sustain development. Education today must be one which will not only promote modernization, but one that will educate people to understand and treasure the natural world. These innovations should

contribute in the transformation of our approach to development such that we can achieve sustainable development in the post-industrial world.

- Reynolds, Peter Alan. (Edith Cowan University, Australia)

Sustainable Development and Schooling for Indigenous Australians

The paper will describe and analyse the Aboriginal population in the Australian State of Western Australia. Their location in a number of developmental zones will be presented with a critique of the nature of the education that their children are receiving. In particular the paper will focus on how the traditional Aboriginal value of sustainable development has been affected by their inclusion within the "development - oriented" nation state of Australia.

- Rivera, Cynthia Luz. (University of Santo Tomas, Philippines)

Sex (and/or Gender) as an Emerging Taxon in the Philippine Archaeology : 1945-1995 (Women and Pre-history)

This paper is a discourse based on documentation from available Philippine archaeological excavation reports from 1945-1995. It focuses on the evolution of the technology of sexing (and/or gender analysis) procedures applied on ecofacts (human remains) and artifacts (anthropomorphic pottery, statuary, and zoomorphic depictions) found in excavation sites. The information derived from these excavation reports as well as those drawn from the texts of related primary documents enrich our knowledge of certain dimensions of the pre-historic lifeways in the Philippines. Through the deployment of the archaeological method, prevailing notions of pre-historical culture patterns based on the reading of proto-historical documents might be interrogated, corroborated, supplemented, and enriched.

Informed of the existing imaging of woman in pre-history based on the reading of primary documents and secondary sources, this paper, given its focus on the archaeological method, inevitably yields information on the status of women. The resulting data establish the congruence or the divergence of local realities from existing paradigms related to women drawn from the emerging pre-historical narratives of other cultures.

This paper, focusing on a series of excavations ranging from the Tabon Caves to the Third Status Report on Surigao, affirms that Philippine pre-history is an anthropological enigma, rather than a monolithic construct, which debunks simultaneity and uniformity as conventionally perceived features of our cultural chronology. Thus, this paper hopes to animate the discourse on the quest for scientifically-based and verifiable pre-historical paradigms for women and enrich

existing data based on mythological narratives and documented protohistorical configurations.

- Rizvi, Fazal. (Monash University, Australia)

International Cooperation and International Markets in Education

In the last decade enormous changes have taken place in Australian higher education. The binary divide between universities and colleges of advanced education has all but disappeared and the new universities are now financed and managed in a radically different way. The reasons for these changes are complex, but among these is the perceived need to 'internationalise' Australian higher education. While the Australian universities have quickly embraced the rhetoric of internationalisation, exactly what they mean by it is less clear. This paper seeks to provide an account of the various ways in which the term 'internationalisation' is understood in Australia. It suggests that the idea of internationalisation covers a range of meanings, but also masks a number of contradictions. Among these is the apparent contradiction between Australian universities' commercial interests in education and their commitment to provide educational assistance to the countries of the Asia-Pacific region.

This paper discusses some of the ways in which Australian higher education has sought to reconcile its educational and cultural goals, including its commitment to international co-operation, and the imperatives of the educational market. It suggests that, in Australia, as elsewhere, the overwhelming emphasis on educational markets runs the risk of constraining the scope of the ways in which international co-operation in education might be achieved, limiting the productive potential that internationalisation of Australian higher education has for educational development in its own region.

- Rosier, Johanna. (Massey University, New Zealand)

Planning, Sustainable Development and Integration of Knowledge at a Tertiary Level of Education

The application of this knowledge is considered important in determining positive and negative effects of development and/or plans. Criteria for evaluating the effectiveness of plans and or management initiatives usually address questions of technical and financial feasibility, effectiveness and efficiency of outcomes, and the legality of decisions and development.

Perceptual and Indigenous knowledge have been accepted by planners and environmental managers. However, the knowledge is usually applied in describing the importance of a resource to a particular group, in outlining conflict of use, and in

interpretative planning where environmental education plays a major role 'replacing regulation' (i.e. if people understand the value of something and appreciate it, they won't destroy it). Overall, qualitative information is still not seen to be useful in setting limits to development or to people's use of natural resources.

Implementation of integrated planning approaches usually relies on power derived from formal mechanisms (i.e. tenure, powers in the statutes), and informal mechanisms (i.e. insider knowledge of a place, physical control of an area through for example squatting). In recent years, the need for community management of common property resources has highlighted the importance of informal approaches which acknowledge different attitudes about common property resources such as fish, water and air. In many instances, attitude differences result from reliance on a knowledge base which is vastly different from the western systems of deriving knowledge, and different views about allocating rights of use and development.

This paper uses a case-study approach to outline a checklist of ideas and processes which need to be incorporated into planning and management paradigms so that different views of management systems are provided for within and between disciplines and the legitimacy of different management approaches are recognized within the overall government context. In educating planners and environmental managers at a tertiary level to achieve integrated approaches to sustainable development, we need to ensure that they are able to critique traditional paradigms underpinning their disciplines and can incorporate all forms of knowledge into analyses of sustainable development matters.

- Royer, Egide. (Universite Laval, Canada)

Behavior disorders and exclusion from school: prevention and alternatives

Violence and behavior problems are becoming a major concern for teachers and school administrators. Often, school suspension and exclusion of behaviorally disturbed students seem to be the only solution available. This paper presents a review of research on school exclusion, identifies limits associated with using in-school suspension as the sole alternative, and proposes a comprehensive prevention model in which development of social skills is presented as an essential component of school-based interventions for behaviorally disturbed students. The evaluation of the impact of this programme will be discussed.

- Sacklokham, Khamhoung. (Ministry of Education, Lao PDR)

Innovative Strategy to Improve the Quality of Education in Lao PDR

The country wide introduction of a new curriculum since 1993 - 1994 is becoming a major challenge in a country such as Laos where the organizational

structure within the education sector is still poorly developed. The new curriculum engaged new methodologies of teaching which focussed on "child centered" pedagogy in which the majority of teachers (25000 in primary) are not competent. A short term teachers' orientation course has been organized, prior to the use of new materials. Despite that, the structure and duration of teachers' orientation courses do not sufficiently safeguard the transformation of the new teaching methods into practice and teachers remain very dependent on manuals. The evaluation highlighted that the duration of training was too short for most of the teachers who need a permanent base of pedagogical support.

- Sakya, T.M.

Education Innovation for People's Development

Nepal began its programme to provide Universal Primary Education and Mass Secondary Education in the 1950s. But the result is very disappointing the net enrollment is only 67.5 per cent of the total school-going aged children and it is only 55 per cent among girls. That is why the absolute number of illiterate persons is increasing every year in Nepal. Illiteracy and poverty are highly correlated in Nepal. Almost all illiterates are poor and are living below the poverty line. Thus it is quite clear that the poor people of Nepal do not participate in and are not interested in the traditional types of education. Therefore, we need innovation in education whereby the people could alleviate their poverty through education. The Centre for Education for All (CEFA) is promoting the concept of "Learning Centres" in Nepal. The Learning Centre (LC) is a mechanism to promote education for people's development. It starts a dialogue with local leaders to generate positive attitudes among them that there are ways to solve problems of working with the people. When the local leaders are ready and preparations are made, a mass meeting is called to be addressed by a person who commands respect. Then problems are identified and categorized as problems which could be solved by themselves, problems which need the local administration's help and problems which need central government help. Three groups are formed, namely women's groups to start early childhood education programmes and women's literacy programmes, youth groups to initiate cultural and sports activities, non-formal education classes and skills training, and elders groups which usually work as advisory groups and link with the formal and informal institutions in the society. The Learning Centre is a catalyst and facilitator for sustainable development. The Centres work closely with local administration to seek its support. The innovation has been experimented with in several parts of Nepal.

- Saliyah, Hamadou Hassane, et al. (McGill University, Canada)

Virtual Environments for Learning and Training on the Job using the Internet

An Internet based *Virtual Learning and Training Environment* (VLTE) is a space where learners and teachers interact with are another and with some computer based simulators, regardless of the temporal or geographical constraints.

The objective of this paper is to present the main components of these attractive and interactive teaching and learning environments for *distance education* and the challenges to put them into work. We will also discuss the need for students in science and engineering to master some of the tools that are used to build computer based modular *virtual instruments* and *learning environments* that they can use on their own. Part of this communication will focus on our own experience in designing and using a multi-media based course, a product that is an element of a VLTE that combines the Internet and the Web to promote a rich and interactive alternative for an efficient learning or teaching task.

In addition to the ability for sharing some means and experiences among participants, the multi-media based VLTEs, are used to simulate mechanisms, processes or virtual instruments. This approach contributes without doubt to lower the financial loads for purchasing and maintaining expensive equipment needed in scientific or technical teaching institutions.

Acting as a team of *multicultural* and *multidisciplinary* experts (teachers) and students in the domain of electrical and mechanical engineering within a *participatory action research* framework, our presentation will show some prototypes of interactive multi-media Web based learning and training modules. This paper is seeking, at the same time, to give teachers or learners, mainly those in developing countries, some means that will help them to evaluate, install or build their own Internet based learning systems. Instead of reinventing the wheel, they can use existing new information and communication technology for their instructional design.

- Salite, Ilga. (Daugavpils Pedagogical University, Latvia)

Holistic Teaching for Sustainable Development

Today the first task in teacher training is to develop the ability in teachers to create curriculum on their own by working in class. Curriculum created by teachers is the circumstance under which every student's individuality will be respected and ways sought to integrate this individuality in cultural, ecological and cosmological systems. Basically, to fulfill this task we can use holism and a holistic approach to education. The holistic paradigm in environmental education requires us to overlook

previous approaches, and values, and to reexamine the curriculum in environmental education.

It is very characteristic for holism that the values depend on how we perceive and realize the interconnections of reality. The focus here is on the interconnectedness of teachers' intrinsic values and professional skills. This interconnectedness is a necessary condition for the teacher to work in two levels of the environmental education curriculum: 1) the content and concepts or knowledge about the world and 2) metacurriculum, which comprises learning skills and strategies on the basis of children's ecological values which help children to learn. This means that the following three main questions in teachers' professional education should be resolved: 1) the possibility should be given to student - teachers to clarify their ecological values, to examine their connectedness with the Earth, which gives an authentic and ecological identity; 2) to give the possibility to student teachers to acquire ecological values (both individually and in groups), simultaneously getting acquainted with the qualitative research methods; 3) to enable students to acquire skills and knowledge in order to develop or sublimate individual ecological values.

During this presentation, I will describe the work experience in the Daugavpils Pedagogical University in undertaking these tasks and the results which were obtained during the project, where we have tried to utilize the holistic approach and ecocentric views in Environmental Education.

- Samnao Kajornsin, Boonreang Kajornsin, Somprasong Nuambunlue, Suriya Sathienkitumpai and Boonsom Cheravanijkul. (The Ministry of University Affairs, Thailand)

The Development of Student Volunteer Activity Models

The general purpose of this research was to develop student volunteer activity models. The specific purposes were: 1) to develop student volunteer activity models; 2) to trial the student volunteer activity models, and evaluate the trials of the student volunteer activity models.

This project was composed of one research sub-project and an evaluation sub-project. There were two sample groups for this project. The first used in the research sub-project comprised 19 experts. The second used in the evaluation sub-project comprised 80 students who were working in the student volunteer camps and 101 local people who were selected by simple random sampling from the two villages where student volunteer camps were located. The instrument used in the research sub-project was a questionnaire. Those used in the evaluation sub-project were check lists, observation forms, interview forms and questionnaires. The data were then analyzed through SPSS of Windows for percentage median, inter quartile range, and Chi-square.

The research findings for the research sub-project were: 1) There were four models of student volunteer activity camps namely conservational camps, academic camps, constructional camps, and combination camps. 2) Each model comprised five student volunteer objectives, nine principles of student volunteer activities, three organizational departments, and five operational stages. All experts agreed that the student volunteer activity models were very suitable.

The results of the evaluation of the student volunteer activity models by using CIPP model were: 1) It was very necessary to develop the suitable student volunteer activity models to be used in colleges and universities in order to reduce the problems of student volunteer activities; 2) Student volunteer camps had enough necessary resources such as man, money, material, and tools; 3) Students in both camps had organized the volunteer activities according to the developed student volunteer models. The quality of the activities was rated in the responses of "very good" and "good"; 4) The students viewed student volunteer activities as one of the most useful tools to promote student personality using responses of "more useful" and "most useful". The local people viewed the student volunteer activities as useful activities for them. They were very satisfied with the students' work.

- Sanyapeung, Chanchai. (Rajabhat Institute Petchabun, Thailand)

The Use of Computer Technology in Rajabhat Institutes

The purpose of this study was to investigate the use of computer technology in Rajabhat Institutes in Thailand. The sample population comprised 23 vice-presidents academic (63.88 per cent), 18 vice-presidents administration (50.00 per cent) and 310 staff (86.11 per cent) of 36 Rajabhat Institutes. The questionnaires used to collect data were developed by the author. The data were analysed by the SPSS for Windows computer programme. The study revealed that most Rajabhat Institutes have a written policy about computer technology for academic staff. The proportion of academic staff having a computer in their offices is less than one third. Their institutions use mainly PCs. Most of the institutions provided training for academic staff to use computers. The training was on demand and more than one-day courses. Most academic staff use computers as word processor, or for data base authoring and spread sheets. There are some computers networked within and outside the Rajabhat Institute. The staff have access to e-mail and world-wide web internet. The budget for 1997 for computers for academic staff (hardware and software) varied from 8,000-10,000,000 Baht. Some institutions buy individual programmes for academic staff and some institutions buy site-licensed software for academic staff. Most of them have no separate budget to maintain academic computers and have a separate budget to buy new computers each year for academic use. Most of them did not employ a technician to maintain academic computers. More than half of them have an academic computer centre but not one computer centre for all computer work.

- Sanyapeung, Kanokporn. (Rajabhat Institute Petchabun, Thailand)

Students' Opinion of Accounting Teaching Administration by Computer Technology

Until computers became the small and powerful packages we have today, they were not common in Rajabhat Institutes. Just over a decade ago, it was unusual for a visitor on a Rajabhat Institute tour to see any computers in classrooms. Today, however, it's hard to visit Rajabhat Institutes and not see a microcomputer somewhere. The purpose of this study is to investigate the students' opinion toward accounting teaching administration with computer technology at the Faculty of Management Science in Rajabhat Institute Petchabun. The sample population comprised all the students who belong to the Faculty of Management Science in the Rajabhat. The questionnaires that I will use to collect the data will be developed by the author in cooperation with experts, staff and students. The content of the questionnaires comprise the biodata of the students, students opinion of the Faculty of Management Science, the use of computer technology, teaching accounting with computers and the teaching of business administration and the management programme of the Faculty of Management Science in Rajabhat Institute Petchabun. The data will be analysed by the SPSS for Windows computer programme.

- Sapra, C.L. (Formerly, National Institute of Planning and Administration, India)

Poverty Alleviation through Adult Education: The Indian Experience

This paper highlights the persistent problem of absolute poverty in India even after 50 years of independence. The paper points out that a number of poverty alleviation programmes launched for the benefit of the poor during successive five-year plans had limited impact on ameliorating the condition of the poorest of the poor due to a variety of reasons, one among them being the lack of awareness. The paper then presents an overview of the development of adult education in the country since independence. This is followed by an assessment of the contribution of two major national level programmes viz. National Adult Education Programme (1978) and Total Literacy Campaigns under the National Literacy Mission (1988) in eradicating illiteracy and reducing poverty. Based on the findings of several evaluation studies of both these programmes, which were undertaken by a number of institutes of social science research and other agencies, the paper concludes that while the policy documents of these programmes did not explicitly articulate any expectation of adult education as an instrument for poverty reduction, implicitly the documents considered the role of the three components of the programmes namely, basic literacy, functionality and social awareness as crucial for socio-economic development. The paper further concludes that because of the gap between formulation of the programmes and their implementation, adult education had a

negligible impact on poverty reduction in India. Finally, the paper suggests that the impact of adult education on poverty alleviation can be considerably improved provided sincere efforts are made to strengthen the implementation process, and simultaneously, a change is brought about in the perspectives of political leaders, bureaucrats, volunteer teachers and a host of other stakeholders, through appropriate training, by making them shed their reservations and fears about the creation of social awareness among adult education learners.

- Selby Smith, C. (Monash University, Australia)

The impact of vocational education and training research on policy, practice and performance in Australia

This paper reports on a study undertaken for the Australian National Training Authority, the Federal-State body with national responsibilities for vocational education and training in Australia. The research project is concerned with the relationships between research and its use or impact in the areas of: policy and planning, both at the level of national, State and Territory governments and at the level of individual training providers; practice and performance at the level of individual training providers, both public and private; and community relations, defined as the interface between VET and other political, economic and societal systems.

The project includes five sections: review of relevant literature; quantitative studies of available research and its dissemination, use and assessed impact; telephone interviews with senior decision makers in State and Territory training systems; ten case studies exploring the use and impact of research in various settings, at various levels and under differing conditions; and some overseas perspectives on the matters which are the subject of the research project. A final chapter in the report seeks to draw together the various strands, identify certain common themes and draw conclusions for the future.

- Siddiqui, Shahid. (The Aga Khan University, Pakistan)

Educational Innovation for Sustainable Development: Problems and Possibilities

There is a growing literature on change at societal level through education in general and teacher education in particular. This paper takes the stance that a change which is short lived is easy to acquire, less difficult to demonstrate, but has little to contribute to sustainable development. On the other hand long lasting change is more challenging to bring about, harder to demonstrate in short time, but is crucial for sustainable development. In teacher education programmes in Pakistan a short term, visible, measurable change may be achieved but the impact of this change seldom travels to or/and stays at schools. Consequently the professional development of

teachers could not be sustained. For the non-sustainability of the development one could explore a number of reasons. For instance, lack of reconceptualization of educational notions, deficient re-entry preparation on teacher education programme, insufficient support from colleagues, want of cooperation from head teachers, dearth of follow up programmes to track the performance of teachers, and lack of follow-on programmes to update the professional status (both content and pedagogical knowledge) of the trainees. The Institute for Educational Development (IED) has come up with a mechanism to help the trainees bring about a change in their concepts, teaching, and attitudes and facilitated them to work for change in their respective schools for sustainable development. The support system includes cooperation in peer level, head teacher level and follow-on professional upgrading level. This paper focuses on sustainable development from the perspective of an innovative teacher education approach at the IED and shares some successes and challenges we are facing in the process.

- Singh, Michael Garbutcheon. (Central Queensland University, Australia)

Global education, critical literacy and curriculum policies: Reading lessons for environmental educators

Beginning in 1994, the Australian Agency for International Development (AusAID) funded the Global Education Project to help promote the integration of global education into Australia's National Curriculum through teachers' professional development. The Project was organized around three major, interdependent components: a review of global education in Australia-wide curriculum policies; providing materials to support teachers' professional development in global education; and engaging teachers in an action-oriented research programme. The first component of the Project, which is the focus of this paper, was intended to be an identification of global education opportunities in Australia's National Curriculum Statements and Profiles for the eight key learning areas. Focusing on this key element of the Project, this paper begins by outlining the method of reading curriculum policies modelled in the Project's report, and then problematises the method of reading modelled in the Project's policy review. The paper then moves on to provide an evaluation of the Project's review using a three part critical literacy strategy.

The first step involves a reading of the ways in which Australia's National Curriculum policies have already been read by some curriculum critics. This is followed by a reading of the changing political economy that created the conditions which made the National Curriculum initiative possible. The third step indicates ways in which these policies have been reread from the perspectives of global educators. The final section indicates that teachers need not limit their critical literacy to reading, but that some teachers have engaged in the task of writing their own global education curriculum for which they have sought official authorization.

- Siritarungsri, Boontip. (Sukhothai Thammathirat Open University, Thailand)

Characteristics, Educational-Success Promoting Factors, and Attitudes of STOU Nursing Students

The purpose of this research was to study the characteristics, educational-success, promotion factors and attitudes of nursing graduates of Sukhothai Thammathirat Open University. The data were gathered from two-year bachelor's degree programme nursing graduates who completed their studies in 1994. The questionnaire was written by the researcher herself, with suggestions from nursing instructors from the School of Health Science, STOU. Of 420 questionnaires distributed 402 (95.7 per cent) were returned. The data received were computerized to obtain frequency distribution, percentage, mean, and standard deviation. It was found that all these nursing graduates are female. Their average age was 30 years old. Their main purpose in enrolling in the programme was to upgrade their credentials and to obtain career promotion. Their lesser purpose was to enhance their knowledge and experience. On average it took them four and a half years to complete their studies. Most graduates were of the opinion that the most important characteristic of nursing graduates is a high sense of responsibility. The second most important group of characteristics are hard work, perseverance, and being good planners (both before and while studying). The most important educational-success promoting factors were moral support and counselling from STOU faculty members and tutorial session tutors. Other factors, arranged according to their degree of importance, were: fellow students, family colleagues, and supervisors. It was also found that most nursing graduates have positive attitudes towards the nursing profession and the work they do. In particular, they were of the opinion that the nursing profession enabled them to make use of what they had learned for the benefit of themselves, their families, and society. In addition, the profession allowed them to make merit while performing their duties.

- Smith, Allison Lane. (World Education Inc., Nepal)

Health Education and Adult Literacy in Nepal

Research in Nepal draws a clear connection between women's literacy levels and the health of women and their families. Literate women have more knowledge of AIDS, a higher rate of contraception use, are more likely to use oral rehydration therapy for treatment of diarrhea and have their children fully vaccinated. With the Ministries of Health and Education in Nepal, World Education implements a non-formal education model that increases women's literacy skills and health and family planning knowledge. The Health Education and Adult Literacy (HEAL) model provides a 15-month course of literacy instruction and health education in three phases.

A six-month basic literacy course provides instruction in reading, writing and numeracy through relevant reading on topics such as agriculture, health, social issues and conservation. The instructional design is participatory, classes are taught by locally recruited and trained facilitators and visited by a trained supervisor twice a month. The basic literacy course is supplemented by 12 lessons specifically related to health content such as AIDS, nutrition, sanitation, family planning and first aid. Women, with the help of a facilitator, read and discuss the text and engage in learning exercises that reinforce the basic skills and health knowledge they have acquired in the first phase. The third phase, in which women continue to meet to read and discuss relevant topics in greater detail, lasts six months and is facilitated by a class member.

The HEAL model has achieved considerable results. Data indicate that HEAL participants have gained more health knowledge than women who complete a non-HEAL basic literacy course, women who receive only health education from a Community Health Volunteer (CHV), or schooled women who receive CHV-led health education. Based on the success of the HEAL model, World Education is developing similar models focusing on livelihood improvement for rural women as well as health issues for adolescent girls.

- So, Chhun. (Ministry of Education, Youth and Sports, Cambodia)

Non-Formal Education for Sustainable Development in Cambodia

The government of Cambodia launched two literacy campaigns, one during 1980/83 and the other during 1983/86. At the beginning of 1988, the campaign was closed and it was claimed that according to the enrollment figures in the literacy classes, 93 per cent of the adult participants became literate. However, the number of people who did attend classes did not necessarily become literate, and when they did, they quickly forgot their newly-acquired skills because there were no post-literacy programmes nor reading materials available. The contents and the methodology of the manuals were not well adapted to the needs of an adult rural population. Both the results and experiences of these two adult education programmes, and the urgency of current needs, has stimulated a Government strategy for improving the quality of Non-Formal Education in Cambodia.

- NFE programme is being reformed to play a lead role in poverty alleviation by assisting 38 per cent of Cambodian households who have been identified as currently living below the poverty line to meet their basic needs.
- NFE programmes are expected to build up awareness on environmental issues and promote community participation in the protection of the country's natural resources which are at the critical stage of being exploited without benefiting the masses of people.

- NFE programmes should play an important role in building the culture of peace and democracy in Cambodia after over two decades of armed conflicts.
- Sookkarn, Hansa. (Mission College, Thailand)

Internationalization of Higher Education in Thailand

As the result of globalization, a growing interdependence among nations, and the information revolution, countries are focusing on their economic, scientific and technological competitiveness. The implication underlying such development is the need for re-thinking higher education provisions, in order to train graduates with international competence.

In 1990, upon the completion of its long-range visionary plan, the Ministry of University Affairs announced four development themes for the future of higher education in Thailand, i.e. excellence, equity, efficiency and internationalization. Finally, in the 7th National Higher Education Plan covering the 1992-1996 period, several internationalization measures and initiatives were integrated into this plan which made it the first plan that decisively put the issue of internationalization as one of the leading themes on the agenda for higher education in Thailand. The plan sets the goal for higher education institutions to develop more international programmes in areas of their respective expertise. Likewise, it will encourage every institution to review its existing programmes so as to add more international dimensions to various subject matter.

At present, the Thai university system set up international programmes in various forms such as transforming the Thai language programmes into an English language programme; mutual educational, inter-universities (local and abroad) programmes or off-shore campus programmes

The purpose of this research is to study the internationalization of higher education in Thailand by using questionnaires developed by the researcher. The expected outcomes are a re-examination of the major strategies used by higher education institutions.

- Somprayoon, Wannee. (Srinakharinwirot University, Thailand)

Wannee Teaching Model : An Educational Innovation for Mathematics Teaching Development in Elementary Schools

The Wannee Teaching Model is a new mathematics teaching model at the elementary school level. It is an educational innovation created by integrating various teaching methods, techniques and activities. In this way, related educational

concepts, theories, philosophies, principles, were systematically and deliberately designed as an integrated teaching process under the general heading of holism. The creator of the model and her teacher colleagues tried out this instructional process until it was deemed satisfactory. The new teaching model comprises 8 teaching steps: Approaching, Revising, Executing, Concluding, Attitude Forming, Applying, Skill Practicing and Evaluating.

By means of **integration**, the Wannee Teaching Model can be used effectively to develop children's desirable learning outcomes; such as learning achievement, retention, creativity, attitude, achievement motivation etc. to the highest level of their potentiality. In order to disseminate this successful teaching model, in-service teacher training was held more than 100 times in the past 16 years. In addition, 35 research reports from graduate students and senior researchers at various educational institutions, recommended strongly the use of the Wannee Teaching Model. The Meta-Analysis research conducted by the research team on learning development at the Ministry of Education revealed that using the Wannee Teaching Model, children's learning outcomes were higher than those from 45 mathematics teaching models currently used in elementary schools throughout the country.

- Southwell, Beth. (University of Western Sydney, Australia)

Literacy and Numeracy for Sustainable Development: The Chicken or the Egg?

A recent survey in Australia indicated that illiteracy and innumeracy are common among the unemployed. Usually poverty is a result of unemployment though there are many other causes as well, particularly for some categories of people in society such as single mothers and fathers. This result from the survey prompts the question: Does the absence of literacy and numeracy cause unemployment and poverty or is unemployment and poverty the cause of illiteracy and innumeracy? In this paper this question is explored in terms of the meanings of literacy and numeracy and the possible emphases in school curricula needed for the development of sound literacy and numeracy skills and understanding. The main focus will be numeracy and a description of numeracy and its relationship to national and sustainable development will be attempted. Links will be made to the values inherent in the development of numeracy and the particular relevance of numeracy to the education of women and girls. Further, an attempt will be made to link these ideas to the needs and aspirations of developing countries.

- Strangward, Suzanne. (Future Problem Solving Programme, Deakin University, Australia)

Students Today - Leaders Tomorrow Training Young People for Civic Responsibility

We are living in a changing world, a world which is becoming a global community with international obligations. We have responsibilities for sustaining the ecology of our planet, protecting its resources, facing and solving global crises. Our young people must be prepared for their future leadership roles.

Social responsibility is a characteristic of gifted students. They empathise with others, have a heightened sensitivity to global affairs and a deep concern for moral and social problems (Silvermann, 1988). The Future Problem Solving Programme trains students to explore issues, think critically, futuristically and positively, work independently and in teams. Although, as its name implies, the Programme has its main thrust in the future, this paper will demonstrate how the FPS process may be used for decision-making and community problem solving in the present. This training will help prepare students to become an ethical workforce in the future. The Australian programme has shown how a good programme for the gifted may be adapted for general classroom use so that all students may experience success: improved skills in communication and problem solving with an increased optimism towards their own ability to contend with issues emerging in the future.

- Suksomboon, Prajuab. (Rajabhat Institute, Thailand)

Buddhist Strategy in Administrators' Decision-Making for Sustainable Development

Buddhism plays a very important role in Thai life. Its doctrine is not only the major moral force of Thai family and community but also has contributed to problem-resolution for centuries. The use of Buddhist strategy in an administrative decision-making process will ensure the effectiveness and efficiency of the organization.

In general, decision-making is the selection among alternatives to guide actions. It is, of course, a major responsibility of all administrators and an indispensable activity at any stage of administration. In other words, administration is a continual decision-making process which has a cycle of events including 5 sequential steps: (1) recognition and definition of problem or issue; (2) analysis of difficulties in the existing situation; (3) adoption of Buddhist strategy - Divine States of mind and objects of sympathy; (4) development of a plan or strategy for action; (5) initiation of the plan for action and appraisal of its success.

In solving the problems, the Buddhist strategy plays a crucial role in alleviating three kinds of defilement - craving, pride, and misbelief - and, meanwhile, fostering sustainable development.

- Suntornviphath, Praon. (Royal Thai Naval Academy, Thailand)

Thai Naval Academy's Curriculum for Sustainable Development

Due to some misconceptions of development, we have focused upon economic development at the expense of its social counterparts, including human resource development, which will in turn lead to unsustainable development. Education is the best means to attain sustainable human resource development, especially an integrative programme encompassing behavioral, cognitive and affective aspects. The Royal Thai Naval Academy has produced military leaders for Thailand for 100 years. The time is critical for curriculum reform, which is the objective at this research.

The methods of this study are an analysis of sustainable development factors, an analysis of the Thai Naval Academy's curriculum and an integration of new curriculum with theories and principles of higher education, in a holistic manner. The result will be a new curriculum with three important elements: general education to assure that graduates possess analytical thinking ability and competence in problem-solving; professional education to instill the professional and leadership skills required of the Navy; and an academic major in a subject chosen by cadets to develop their individual interests and talents.

- Suwannasilp, Sununta. (Borommarajonnanee College of Nursing, Thailand)

Self-Directed Learning : A Learning Strategy for Sustainable Development

At the dawn of the 21st century, the world is faced with waves of globalization and is being drawn into a learning society or information technology era. Education, consequently, must now be defined as a life-long learning process. At present, the ordinary process of learning is teacher-directed learning while current knowledge is disseminated to students in daily mass media exposure. The process of appropriate learning to instigate life-long learning is self-directed learning or student-centered one. Self-directed learning conjures up disparate images. The learners are motivated to learn because they are exploring interesting topics in the ways that match their personal learning styles.

The self-directed learning model is summarized as follows:

- Learners can progress towards greater control of their learning, but simply being an adult does not assure them of the ability to take a high degree of control.
 - A process in which learners take the initiative for analysis and diagnosis for their learning needs, formulation of personally relevant learning goals, identification of how to achieve them, and reflection on their achievement.
 - The degree of learner control depends in part on the situation and in part on the learners' ability to transfer skills and metaskills to a new situation. Learners' control may also be related to subject matter. Some subjects seem to be taught effectively by the same method to learners in all aspects of self-direction. This paper focuses upon a self-directed learning model as a learning strategy for sustainable development.
- Tabibian, M. (University of Tehran, Islamic Republic of Iran)

Indicators and Sustainability

1) Introduction

Development, especially in the developing countries, has become the key word used by politicians and economists to motivate the citizens to achieve their goals, which vary from country to country, depending on education and literacy levels. It is unfortunate that most supporters of rapid development do not pay due attention to the adverse impact of development which results from a badly planned development.

After the recent interest shown in environmental problems by world bodies, some concern is being shown in this respect. Concern about the environment and understanding of its importance to human self-being has increased greatly in Iran over the past decade. Reporting to decision makers, industry and the community about the ever-changing condition of environmental quality is an essential response to these well founded concerns. However, developing programmes for providing meaningful state management of the environment is not easy. The quality of environment in Iran, particularly in large cities (similar to many other cities) has declined sharply. In order to have a more accurate and comprehensive picture of the quality of the environment in Iranian urban centers, we have undertaken a research project titled "Indices for the Evaluation of the Quality of Urban Environment in Iran". This project commenced in March 1994. It is being carried out by a team at the Faculty of Environment of the University of Tehran.

2) Purpose:

The main objective of the project is to provide adequate information to the public sector and to the general public about the current level of urban quality and its impact on the health of the environment. We further aim to prepare a set of guidelines to be applied in the management of the cities in order to achieve a level of quality of urban life in accordance with internationally acceptable standards. For the above purpose, a set of indicators has been selected on the basis of our studies and the relevant literature in this regard. Accordingly a model has been made based upon the selected criteria. It comprises 12 key indicators, reflecting, environment, socio-economic, structural environment and population factors of environmental significance. The main objectives of the model are to increase the public awareness of the current quality of urban environment and to provide information for decision makers and policy analysis and for environmental education activities.

- Tamayo, Karen L.B. (University of Perpetual Help System, Philippines)

An Innovative Graduate Programme to Prepare Clinical Programme Developers

Preparing competent graduates in the health professions requires faculty with expertise in teaching and learning as well as a high level of proficiency in the clinical setting. Faculty who are confident in their knowledge and skills are able to provide an atmosphere where students can appreciate standards of practice as well as challenge them with new ideas. This necessitates access to a rich background of professional exposure gained under experienced practitioners. The Philippines, like other developing countries, has been a victim of prolonged 'brain drain' in various health professions resulting in crises for schools. The scenario is familiar: Faculty resign in the middle of a semester leaving young inexperienced, fresh graduates to fill in as teachers and clinicians lacking in guidance from older experienced professionals, the faculty understandably have difficulty in maintaining standards. Eventually the education of students as well as clinical practice undergoes a gradual but steady decline.

One measure to assure quality in teaching and learning and in the health related programmes at the University of Perpetual Health System is through a specially designed graduate programme, a Master of Science in Clinical Programmes Development. The objectives of the programme are to prepare practitioners with the ability to develop and implement innovative clinical programmes as well as to develop in them a high level of clinical expertise in a special area of practice. Utilizing the concepts of Problem-Based Learning the programme is meant for highly motivated mature learners. It is open to graduates from any of the health professions including medicine and dentistry. Faculty reactions to this programme have been favorable and several proposals have been submitted for consideration.

- Tantiratanavong, Jirane. (Ministry of University Affairs, Thailand)

The Recognition of Laos Academic Qualifications in Thailand to Promote Thai-Laos Co-operation for Sustainable Development

In the fast-developing global economy, there is a need for greater transnational mobility of people in education and/or employment. Higher Education is a key component in achieving successful sustainable economic and community development. Therefore, international co-operation in university education will play an important role in the development of some countries, especially the country wherein there is no university or only a few universities offering a limited fields of study, for example, the Lao People's Democratic Republic. Thailand's immediate neighbour, has only one university, the National University, which offers limited fields of study at bachelor degree level only. Thus for the closer links and cooperation with its immediate neighbour, Thailand should assist Lao in developing human resources. A good way of assistance is to encourage Laotians to study in Thai universities. To promote Thai-Lao co-operation in university education by encouraging the mobility of Lao staff and students to educate at universities in Thailand, a degree recognition system has to be established to replace the individual assessment basis, which usually takes a long waiting period to get final equivalence decisions.

This study is intended to provide a useful guide to the assessment of Lao qualifications to assist educational institutions and employers. An overview of the Lao education system will be given and the background for interpreting the assessment guidelines also provided. Moreover, it will provide information on the comparability of Lao qualifications with its Thai counterparts. The results of the study will be a handbook in assisting Laotians wishing to migrate to Thailand for studying or seeking employment. It will serve as a reference for higher education institutions in considering student admissions and advanced standing, and it will be widely used by both employers and job applicants.

- Thamrongwarangoon Tantip. (The Sustainable Community Development Foundation, Thailand)

The Sustainable Community Development, Holistic Approach of Khon Kaen

The Sustainable Community Development Foundation, Khon Kaen, Thailand developed a project for sustainable community development with the objective of facilitating community organization to identify the problems and learning processes of local wisdom, to solve the problems and to strengthen community organization and develop the leadership potential of natural, informal leaders. The project was carried out in 18 villages in Phon, Wangyai and Ubolrat districts of Khon Kaen province by

the Strategy of Facilitate Community Organizations to gather as interested groups to become learning groups and then to become activity groups.

Results of the project found that there were 18 integrated farm groups and 18 saving groups, and a significant decrease in migrant laborers. 121 natural leaders were found of good quality and good potential for leadership. At meetings, members of the project found that their problems were explored and solved gradually. The growth in fruits, big trees, fish, poultry, and cattle made them happy, physically mentally. They wanted to meet in groups regularly to find out their problems and try to find the way to solve the problems. The interchange with other groups developed the quality of the group and led to a good quality of life and environment.

- Thanh Son, Thai. (University of Technology, Viet Nam)

Education in Vietnam in the Period 1996 - 2010 : A Tool for Poverty Eradication and Social Development

Vietnam is one of the poorest country in the region as well as in the world. The country has had to support the heavy consequences of more than 30 years of war time and 15 years of the American economic embargo. Since 1985 the Vietnamese government has adopted the policy of DOI MOI (Socio-economic Renovation) aiming to lead the country to be quickly integrated with other countries in the region and in all the world. Vietnam has made considerable achievement but there are still a lot of difficulties in its development process. Besides the potentialities of its natural resources, of its geographical position, as well as of promoting international relations, one of the most important resource of Vietnam is its manpower resource : millions and millions of industrious and intelligent Vietnamese with their tradition of learning and of overcoming all difficulties. However one of the biggest disadvantages of this manpower resource is the limitation of know-how, the shortcoming of basic education and skill training. The Vietnamese government has decided on three main targets of Education and Training in the period 1996 - 2010 for national development:

1. Raising the cultural level of the population,
2. Training manpower, and
3. Fostering a generation of talent for the future development of the society.

In this paper, the author presents some orientations to and measures taken in Education and Training in Vietnam aiming to realize the three above mentioned targets, especially to contribute to the noble cause of poverty eradication in the whole population as well as to accelerate the process of the socio-economic development of the country.

In the conclusion to this paper, the author touches upon some first experiences drawn from the implementation of the orientations and measures during the last 5

years (1991-95) and also presents some propositions about forms of international co-operation in this area.

- Tilbury, Daniella. (ACTION Research for Sustainable Development, Gibraltar)

The Role of Research in Sustaining Curriculum Innovation: Experiences in Environmental Education

The process of sustainable curriculum change rarely constitutes the basis of educational research. Studies have contributed to an understanding of the process of curriculum innovation, particularly identifying factors that impede or determine successful curriculum development. However, questions about how to support curriculum innovation in the longer term are often neglected. It is an issue which has also been evaded by many studies in Environmental Education and which now needs to be a key concern for educationists seeking to introduce this area of learning into the mainstream education.

The paper reviews research developments in Environmental Education and critically assesses its contributions to educational innovation. Several national as well as major international research initiatives in Environmental Education are analysed. It reflects upon why it is proving difficult to sustain innovation in this area and discusses the role of research in achieving long term change. The paper draws parallels between the challenges facing sustainable curriculum development in environmental education and those confronting changes towards a sustainable environment.

- Tripathee, Laba Prasad. (Regional Education Directorate, Nepal)

Approaches Considered in Nepalese Educational Innovation for Sustainable Development

Educational innovation for sustainable development:-

When we talk of educational innovation for sustainable development in the Nepalese context, it is imperative that the following factors must be kept in mind. As a developing nations these factors are correlated with the sustainability of the programme as such. The factors affecting the sustainability for our educational innovations are:

- Commitment and the government policies.
- Institutional (management) capabilities and organizational need.
- Availability and capability to use financial resources (domestic and foreign).

- Technical (human resource) capacity to select, adapt, review and maintain programme.
- Possibility of local participation and the local resource mobilization (resource generation).

Approaches considered in educational innovation for sustainable development:-

Considering the factors, the educational issues mentioned and present educational status, I propose the following educational innovation for sustainable development in the Nepalese context.

Organizational (institutional) innovation:

- Creation of a Department of Primary Education and Department of Secondary Education at the MOE
- Establishment of a constitutionally Autonomous National Education Commission at the MOE
- Establishment of a Department of Teachers Pension and Gratuity at MOE and a section at RED
- Creation of a Pre-primary section at MOE, 5 REDs and 75 DEOs
- Expanding resource centres in 35 districts trialled under the Seti Education Project for Rural Development (Funded by UNDP) and Primary Education Project (funded by World Bank) and implemented under the Basic and Primary Education Project (BPEP)
- Creating and maintaining effective EMIS sections at each DEO and RED and strengthen the Monitoring Evaluation cell of MOE
- Strengthening the Programming, Monitoring and Evaluation sections of the REDs

Summary and Conclusion:-

In the present context of Nepal the educational bureaucracy is expected to be very strong and sound enough to implement educational policies. Some educational innovations made in the past for sustainable development were the Resource Centres developed under the Seti Education Project for Rural Development. These centres need to be expanded in the remaining 35 districts of the country. These Resource Centre based educational activities have been found to be very effective in improving class-room instruction. These centres are found to be the nucleus for formal and non-formal educational activities, and teacher education and teacher training activities.

- Ulluwishewa, Rohana. (Universiti of Brunei Darussalam)

Indigenous Knowledge, Education and Sustainable Development

Indigenous knowledge (IK) is often defined as a systematic body of knowledge acquired by local people through the accumulation of experience, informal experiments, and intimate understanding of their environment in a given culture. It is the sum of experience and knowledge of a given group that forms the basis for decision making with regard to familiar and unfamiliar problems and challenges. IK is also considered as local knowledge unique to a given culture or society. IK includes the knowledge inherited from previous generations as well as the knowledge generated by the generation concerned through experimentation, experience and trial and error.

The potential value of IK for sustainable development is well documented. IK has been transmitted from generation to generation through traditional education that was based on the learning of children and youths (junior members of a given community) from elderly people (senior members). Therefore, the relationship between children and elderly people of any given communities play a crucial role in the process of inter-generational transmission of IK. The teacher-centered school based modern education system separated children from the senior members of the community e.g. parents and grand parents, and linked the children to teachers who teach them the modern western knowledge. Therefore, the separation of children from elders interrupted the inter-generational flow of IK. Hence, indigenous knowledge now remains only in the memory of elderly people, the bearers of the IK, and it will cease to exist with their death unless it is integrated into modern formal education. Integration of indigenous knowledge into formal education system not only preserves the indigenous knowledge but also enhances the education's capacity to contribute to sustainable development. However, integration of indigenous knowledge into the current education systems calls for a lot of deliberations, dialogue and discussion.

- U-Sa Theanthong, Toy. (Central Regional Non-formal Education Centre, Thailand)

The Development of Participatory Process at the Local Level for Sustainable Development

The economic development of the country has resulted in a wider gap between the rich and the poor. People in rural areas are deprived of educational opportunities, job opportunities as well as the state of well being. The rural resources are drawn upon to serve the minority rich in the cities. Rural communities become weaker and weaker. It is important that rural people take active action to correct these situations. The Eighth National Socio - Economic Plan has put the emphasis on human development. The plan also encourages people's participation and decentralization in

the form of a Local Administration Body. It is now time that local people and institutions participated in all aspects of development. Sustainable development must involve the people's participation. Thus, it is the role of Non-formal education to re-orient the way people think about development and to equip them with tools for participatory development and knowledge on projected implementation strategies.

The objectives are:

1. To inform and re-orient the attitudes of the participants towards development and participation;
2. To equip the participants with the metaplan technique which is necessary for effective moderators; and
3. To equip the participants with administrative skills.

A series of workshops was organized by the Central Regional NFE Center. Participants were government officials from the NFE organization at the provincial level and district level. Also, twenty local leaders were invited to participate in the workshop. Emphasis in the workshop was given to the Metaplan technique. After the workshops, the local leader participants implemented the metaphan technique in their work. Then they were invited to attend another workshop on administration.

It is believed that to bring about sustainable development, people must first have right attitudes. They should have appropriate tools for their work and they should possess the necessary managerial skills. The workshops organized by the Central Regional NFE Centre were designed just for those things.

- Uzzell, David L. (University of Surrey, United Kingdom)

Can Children Act as Catalysts for Sustainable Development?

Children have been regarded as a key audience for environmental messages and encounters because they are seen as tomorrow's opinion leaders and stewards of the earth. It is nevertheless children's parents who have the direct power *now* to introduce or influence policies and practices essential for sustainable development. It is adults who are consumers, industrialists, media producers and presenters, community leaders, educators, and policy and decision-makers in all walks of life but who are also parents. There is a need to educate children and adults about the environment because *together* they can act as powerful catalysts of social and environmental change. How can the considerable investment which is currently made in environmental education for children be maximised so that it has an impact on their parents?

This paper describes the results of a major innovative research project funded by the European Commission (Environment Programme: SEER 1) and undertaken in

Denmark, France, Portugal and the United Kingdom. The research examined the processes through which environmental action competence can be disseminated inter-generationally within the family to produce environmentally sustainable behaviours among children, their parents and the wider community. The paper will discuss some of the fundamental educational and psychological reasons why environmental education does not and cannot achieve its objectives as it is currently taught. The paper will summarise the key findings of the European Commission research project, concentrating on those mechanisms that enable children to act in a catalytic way and the barriers which prevent their effectiveness in fulfilling this change-agent role. The research suggested that children, despite their minority status, can act as catalysts for socio-environmental change both in the community and the home.

- Von Queis, Dietrich. (University Bw Hamburg, Germany)

Educational Innovation Through Evaluation and Staff Development

Successful staff development and evaluation of teaching are crucial factors in educational innovation. Current trends of evaluation tend to stress mainly quantitative aspects of teaching, such as numbers of hours, teacher-student ratio, numbers of classrooms, quantity and availability of teaching and learning materials etc. A more comprehensive and effective evaluation should include the quality of teaching, meaning the interaction, the teaching-learning process and the methods of teaching. A key component of the quality of teaching is the statement on the philosophy of teaching. Teachers are forced to think about the effectiveness of their teaching: why did they do what they did in the classroom? The teaching portfolio is a very particular instrument to document and to improve teaching performance by self-evaluation.

At present formal teaching evaluations are usually used punitively, to identify staff for dismissal. This use understandably fosters skepticism and resistance among professors. Teaching evaluation is more likely to gain acceptance among professors and to encourage the adoption of new teaching methods when used as a criterion to reward effective teachers through promotion decisions or other means. This paper will give a short overview of

1. evaluation of teaching by a teaching portfolio, and
2. trends and issues of academic staff development of Europe.

- Walker, Caroline. (The Small School, Hartland, United Kingdom)

The Small School - A Working Example

The Small School is a working example of educational innovation for sustainable development. It takes its inspiration from the work of Tolstoy, Gandhi,

E.F. Schumacher and David Orr. Innovative practice in the following areas will be described:

- buildings and land: the school is implementing the recommendations of an energy audit and is involving students in the planning and creation of a 'green' building.
 - curriculum: the school believes that all education is environmental education. The school offers a variety of academic, creative and practical activities, as well as a programme of ethical and spiritual study, to give students the knowledge, values and skills which will enable them to think globally, act locally, and live sustainably.
 - methodology: teaching methods are based on active enquiry and critical awareness, with the teacher working alongside rather than dictating from the front. The use of information technology and electronic communications is welcomed. Group work is encouraged and students helped to become autonomous learners.
 - decision-making structures: the management of the school is done co-operatively and in a non-hierarchical way. Consultation with parents, pupils and staff is built in to the constitution.
 - institutional resource policies: students are encouraged to study the resource flows through the school and to trace the origins of what we consume. They are then invited to suggest more sustainable policies such as preference of local goods and services and use of fairly-traded commodities.
 - contribution to Local Agenda 21 initiatives: the school contributes economically and culturally to the life of this remote community, thus preserving the vitality and diversity of rural life.
 - The school aims to be an example of good practice and stresses the importance of local solutions to educational problems.
- Walsh, Max. (PROBE, Philippines)

The Philippines - Australia Project in Basic Education (PROBE): an exercise in building for sustainability

The Philippines - Australia project in Basic Education (PROBE) is a 5-year education project that commenced in February 1996 and will conclude in 2001. It is jointly funded by the Governments of Australia and the Republic of the Philippines and administered through the Australian Agency for International Development (AusAID). PROBE aims to improve basic education in English, Mathematics and Science through targeting teaching skills of both pre- and in-service teachers. This paper will describe how the major focus of the project is not only to meet the needs of the present generation but to empower all participants through deliberate planning to sustain the effort long after the project has concluded.

- Wang, Tiejun. (Jiangsu Education Institute, China)

On Lifelong Education and Sustainable Development

Sustainable development is a strategy of a country's national economy and social development. It is a way and model to reach sound coordination between the population the economy, society, the environment and resources, which cater to the needs of contemporaries without endangering the life of future generations. Sustainable development has also pounded at and influenced the educational sphere, and challenged the traditional concept of education. Lifelong education is an educational trend of thought conforming to sustainable development.

Part One of the paper expounds that lifelong education is an essential path to the realization of sustainable development. Part Two elaborates that lifelong education should exist continually throughout one's life, and it should help to promote mutual understanding and infiltration between all kinds of education at various levels. Part Three points out that one of the major issues of lifelong education is to train people and to enhance their awareness of the ecological environment, through which the sustainable development of the society can be brought about.

- Waterworth, Peter. (Deakin University, Australia)

Cultural disjunctions in education: Issues in exporting Western education to Eastern learners

Efforts to export Western higher education to non-Western countries face dilemmas in adapting educational models to suit local settings and understandings. This paper examines the issues involved in making adequate adaptations in Western educational programmes when presenting them in Asia and seeks to analyse the nature and extensiveness of those adaptations. It is based upon the author's experiences of teaching higher degree students in Indonesia and Thailand.

Learning strategies should always take account of the cultural background of the learners, even in so called monocultural settings. All the more so, in cross cultural settings, educators need to consider the powerful impact of cultural frames of reference upon thinking, acting and learning. Education in itself, is an expression of culture as well as being the means of transmitting that culture. Education also represents and symbolises cultural distinctiveness. It is hardly surprising to witness the difficulties teachers have in transforming their Western based teaching strategies to suit the learning predispositions of their Asian students. Nor is it any wonder to see the struggle many Asian learners have in trying to adjust their learning styles to suit the demands of their Western teachers. The barriers arising from cultural

disjunctions have an enormous impact upon the achievement of learning goals and consequently upon the achievement of sustainable development outcomes.

The capacity of teachers and learners in cross cultural learning situations to adjust to one another's culture is likely to be affected by a number of factors including attempts to gain familiarity with the other's culture, the development and use of strategies to enhance tolerance and diminish prejudice and the study of the processes of enculturation. Participants in the session will be invited to discuss ways in which the undesirable effects of cultural disjunction may be minimised and the positive outcomes of sustainable development maximised.

- Williams, Ross. (Universiti of Brunei Darussalam)

Matching School Curriculum to Sustainable Economic Growth : Rhetoric or Reality?

Sustainable development is closely linked to the development of a nation's human resources. One of the most formidable challenges facing the emerging S.E. Asian economies is the need to upgrade the skills of their human resources so as to provide a workforce best suited to meet the needs of the growing manufacturing and service industries. Fundamental in that process is the ability of the respective educational systems to provide an adequate basis upon which to develop human resources and more specifically skilled workers who can contribute to and sustain the projected economic growth of their nation's economy. In Brunei Darussalam, the education system is faced with the prospect of preparing its workforce for a 'diversified' economy, one which is no longer reliant on oil and gas solely.

This paper will attempt to examine the extent to which the current school curriculum provision is best able to meet the identified need for a skilled national workforce, capable of supporting and contributing to the planned diversified economy of the future. Central to this discussion will be an exploration of the primary and high school curriculum, and the underlying beliefs, structures inherent in that provision. This will then be matched to the future needs of an emergent and diversified economy.

- Wilson, John and Amerul Islam. (Victoria University of Technology, Australia, and Higher Secondary Education Project, Bangladesh)

From Implementation to Adoption: Institutionalising Teacher Training in Higher Secondary Education in Bangladesh

A common feature of externally funded aid projects is for Governments to establish a Programs Support Unit (PSU) to oversee successful implementation.

Equally common is the loss of momentum which occurs when the project is transferred to recurrent funding from Government revenue budget.

Since 1992 the Government of Bangladesh Higher Secondary Education Project (HSEP) has, with ADB funding, sought to refocus the objectives of Higher Secondary Education (Grades 11 and 12), to reform management, to develop curriculum and to introduce teacher training. Implementation has been managed by a PSU. The teacher training component established 5 Higher Secondary Teacher Training Institutes (HSTTI) which will have trained around 4,000 teachers by the end of the project in 1998. With the support of an international specialist and 3 local consultants, funded by United Nations Development Programme Technical Assistance, HSTTI faculty have acquired considerable success in developing practical approaches to training, and are confident in, and committed to, their work. Both trainers and trainees have been trained to some degree for their respective worlds of work.

This paper reviews the work undertaken in teacher training and analyzes the development needs of the sector. It outlines the factors which are most likely to affect the sustainability of these achievements in HSE teacher training subsequent to the completion of the project. It includes a checklist of actions which could be taken by Government, aid agencies, training management and consultants to promote sustainability and future development.

- Winter, Sam and Judy Lam. (University of Hong Kong, Hong Kong, China)

Developing Emotional Intelligence for Life in a Complex and Changing Society: a 'Thought Power' Project for Hong Kong Students

Life in modern fast-changing societies demands that people respond intelligently across increasingly varied situations. In such circumstances emotional intelligence becomes as important a form of property as cognitive intelligence, critical to the sustained well-being of society. However, our education systems tend to focus on the application of intelligence in academic situations, placing less emphasis on developing intelligent behaviour in relation to personal and interpersonal problem situations. They consequently focus on cognitive intelligence rather than emotional intelligence.

Robert Chapman's 'Thought Power' programme, developed in the late '80's, may be regarded as an approach to the development of emotional intelligence. It seeks to develop students' ability to harness helpful thoughts and suppress harmful thoughts in solving the personal and interpersonal problems with which they are confronted in their lives. A modified version of the programme was used with students in a regular secondary school in Hong Kong. A randomly selected group of students took part in a ten session 'Thought Power' programme organized in their

school. The programme focused on stress identification, awareness of the role of thoughts in creating feelings, relaxation, awareness of automatic thoughts that are harmful and helpful, emotional versus physical pain, modification of automatic thoughts, problem-solving and alternative goal setting.

Data on harmful thoughts, helpful thoughts, stress, general well-being and locus of control all revealed positive benefits for involvement in the 'Thought Power' programme. Several comparisons of each type were statistically significant. The findings suggest a role for such programmes in the regular schools in the fast developing societies of Asia and the Pacific.

- Wisedsook, Sarnit. (Rajabhat Institute : Mooban Chombung, Ratchburi)

Some Critical Aspects in Educational Reformation

The term "educational reformation" is very influential in Thailand. It is sometimes used by the politicians. This term can mislead school teachers and parents about features of schooling, instead of the truly educational concepts.

Investing more funds for buying expensive equipment and expanding the years of compulsory education should not be counted as reformation. Reformation should be counted by its attempt to make schooling more meaningful education than the traditional implementation.

Teaching approaches for students' values development and the changing of the administrative strategies should be counted as educational reformation. These are economically cheaper than the other kinds of investment.

- Wood, Derris Lynette. (University of Tasmania, Australia)

Women and Educational Leadership

The research on which this paper is based is being undertaken for a research higher degree at the University of Tasmania. The main aim of the research is to examine the early family, school and community influences, within the primary school years, upon women who have become leaders in the field of education. Factors which affect the development of career choice and motivation, along with a sense of empowerment to achieve career goals are all part of the focus of this study. Provisional findings to be discussed are based on semi-structured questionnaire responses of 30 women school principals or those at an equivalent rank, and a control group of 20 women at the top levels of the classroom teaching scales. Parenting scenarios, parental and sibling interaction, education and career levels within families, school and community involvement were examined. Other aspects analysed were gender expectations, socialization influences, timing of career choices, courses of

action taken to achieve their teacher training and the extent to which the women felt they had achieved their goals. Special attention was paid to the role of "significant others", especially teachers, in influencing and modelling the career choices and the motivation of the women educational leaders.

- Woodward, James. (Mahidol University at Salaya, Thailand)

Opening University Education to Deaf People in Thailand: A Case Study in Educational Innovation for Sustainable Development

In Southeast Asia few deaf people have been able to take advantage of university educational opportunities that are open to hearing people. To deal with this problem, Ratchasuda College is opening university education to Thai deaf people in a revolutionary way. Instead of beginning with core university requirements based on hearing people's knowledge and experiences, Ratchasuda College will use linguistic and anthropological training related to Thai Sign Language and Thai Deaf Culture as the starting point for university education for deaf people. To ensure success for this strategy, Ratchasuda College has formed a partnership with the National Association of the Deaf in Thailand and the Nippon World Deaf Leadership Programme at Gallaudet University, the world's first and only liberal arts college for deaf people. Through this partnership, Ratchasuda College will open its doors to deaf students in June of 1998 with a university certificate programme to train deaf people to be teachers of Thai Sign Language. This programme will be jointly taught by hearing professors from Ratchasuda College and by deaf professors from Gallaudet University. This paper will describe in detail: the planning, development, and implementation of this certificate programme and B.A. programmes that will use this certificate as a foundation; the implications of these programmes for deaf people, for education, and for Thai society; the marketability of graduates and the economic feasibility and sustainability of these programmes; and the possible modification of these programmes to train deaf people in other Southeast Asian nations to teach their own sign languages.

- Yaemsuda, Thanaporn. (Naval Nursing College, Thailand)

Education for Sustainable Development in the Nursing Profession: The Use of the Portfolio in Nursing Education

Education for sustainable development in the nursing profession should conform to the nature of nursing practice process, reflective of real-life practice, and projective of its future professional development. Effective nursing education is to provide prospective nurses with opportunities in developing knowledge, beliefs and skills indispensable to nursing practices throughout their nursing professional careers.

The portfolio is an instructional and training tool that has been applied in both management and education in many countries. The distinguishing characteristics of portfolio design are : explicitness of purpose, integration of theory and practice, multisources for making global determination about learner competency, authentic, dynamic assessment to capture growth and change in the learner over time, learner ownership, and multipurpose nature. In designing portfolios, the faculty employs process as a tool to integrate theory and practice in order to provide learners with optimum learning development towards learner-centered practice and an emphasis on individual identities. Along the same lines, nursing professional practice is based on nursing theory. Portfolios of patients are normally used as a tool of professional practice in assessing the patient's health status, analysis and diagnosis. planning and implementation, and nursing evaluation in responding to patients' problems and based on individual differences, patient-centered and holistic nursing.

In order to facilitate and support sustainable development in the nursing profession, rethinking the teaching and learning process is necessity. The use of portfolios in nursing education by integrating the teaching-learning process in nursing is the best way to provide opportunities for integration theory of nursing practice, to make the teaching-learning process conform to the nursing process, to focus on students and the individual differences of learners, which will, in turn, ensure quality of learning outcomes, and accomplish the goals of sustainable development in the nursing profession.

- Yoon, Kiok. (Inchon National University of Education, Republic of Korea)

School-University Simultaneous Innovation: A Foundation for Educational Innovation for Sustainable Development

Educational Innovation must be focused on all agencies related to education and their relationships, but education has a special obligation to help lead the way in partnership with others. So the urgent problem of educational innovation is to make the educational system a learning organization not just in relation to the latest policy, but as a way of life. Two powerful strategies are needed to bring about innovations at the bottom that are necessary for systemic innovations to occur on a large scale. One is the set of strategies that can be described under the broad label of networking. The other involves the longer term strategies of innovating the conditions and nature of learning and teaching, through reculturing and restructuring. Various kinds of networks can be organized around subject matter, teaching methods, school improvement, or restructuring. Among these the network between schools and a university-teacher education institution seems to be most effective for innovation, because it enables the simultaneous innovation of schools and the teacher education institution.

The network emphasizing action research with the ultimate goal of the teacher as researcher can be very effective, because we can see what effect we could have as a school and as a teacher through action research. A three year project by Incheon National University of Education in Korea, that is, "Classroom innovation through the cooperative effort between teachers and teacher educators with a focus on models of teaching and student teaching" is a good example of educational innovation for sustainable development.

- Zada, K. and S. Malik. (Agricultural University, Pakistan)

Educational Strategies and Innovations for Sustainable Development

Education may be seen to be at the cross roads of development choices. Educational development is future oriented rather than being only a medium for the transmission of the past. The setting of goals for education becomes a crucially important strategy in effecting change. The transformation of higher education so as to make a significant contribution to natural development, requires long term, multi-dimensional, carefully planned and workable strategies. Education, because of its innovative importance, has become a major concern to the developing countries including Pakistan during the last three decades. Priority has to be accorded both to its quantitative expansion and qualitative improvement. The recognition is gradually gaining strength that education should enjoy a dynamic, decisive and strategic status in all spheres of human life. The curriculum, instructional resources, physical facilities and the use of local resources are the basic issues addressed in such development efforts and policy initiatives of the government which greatly envisage major changes to be introduced in educational dynamics, systems and education techniques. The training of educationists, with the emphasis on the organization of the practical, has to be specifically stressed. In the presence of never ending evolution in education, the traditional methods and approaches are now less and less accepted, as they have become outdated. It is, therefore, imperative to foresee the educational needs of the society and be aware of the projections and future demands which will be made on the system in the near future.

- Zaragoza, Antonio J. (Department of Education, Culture and Sports, Philippines)

Educational Innovation for Sustainable Development

Among the outstanding environmental concerns that plague the Asian region are massive air pollution, toxic waste disposal and global warming which pose great threats to low lying Asian countries. The immediate concern is the question of the daily survival especially of the marginalized sector of Asian nations. The majority of these people depend on the land (agriculture), forest (timber), and sea (fishery) products for their livelihood. Today, in the name of development, these natural resources are being diverted to answer the needs of a market-oriented economy and

industry, depriving marginal groups (tribal people fishermen, peasants, and poor) of its benefits because they cannot afford such high technology and development. Using these resources as if they are inexhaustible endangers human survival today and in the future. If only such technology and development could be made affordable and in favor to the needs of the marginalized sector, then at least the poverty level of the society could be minimized. Greater equity comes when there is a widespread distribution of development and technology.

Development today must be based on what is absolutely indispensable to human dignity: the alleviation of poverty, based on the quality of human resources. The only way is to give development a human face is by respecting human dignity through education. Human development is indispensable to national development. Education is total human development. There is a greater need to address the situation of illiteracy in our nations, making education available, even if only basic education, to all children. The kind of human resources we use will dictate the kind of nation we have. Educate people and we will have educated answers to our problems. The contrary is also true.

- Kaloko, Abdul Aziz. (Universiti Brunei Darussalam)

Lesson from the Unreached: Utilizing Indigenous Knowledge in sustainable development among the Penan of Ulu Belait in Brunei Darussalam

Tropical rainforests provide a store house of potentially very useful plant species. However, knowledge of this vast resource potential is held collectively by the indigenous rain forest dwellers through the accumulation of experiences, informal experiments and an intimate understanding of their forest environment. This indigenous knowledge forms the basis of decision making in the sustainability of the forest environment. The Penan of Kampong Sukang in Brunei Darussalam, a traditionally hunter-gatherer indigenous group, has sustainably harvested and managed their natural resources without depleting their capacity to sustain the community and their generations. They have now been resettled into a permanent longhouse in the outskirts of their previous forest domain, but still survive from constant forages into the forest. Today, more than any other time in human history, protection and preservation of the tropical forest biodiversity has become a priority for most governments throughout the world. The participation of the resettled Penan of Kampong Sukang in the maintenance of the rainforest ecosystem will provide a great opportunity for a people whose plant collection, management techniques and affinity to the forests, have always been ecologically sustainable.

This study has, therefore, used questionnaire surveys and interviews of rural Penan to examine the pattern of forest resource management through their perception of the forest, and the utilization of their *molong* concept of natural forest resource conservation. It is hoped that the study will provide more supporting evidence in the

contemporary arguments for the incorporation of indigenous knowledge in the management of the forest environment.

- Lahlou, Mehdi. (INSEA, Morocco)

The Education System and opportunities for transition in Morocco

Already very restricted since the beginning of the 1980s and in some way, the cause of the excessive debt of the country, the economic and social performances of Morocco, remain extremely weak, 15 years after it adopted its first Structural Adjustment Programme. The main reason of that, and in the absence of conclusive effects from the array of measures of every kind decided during this period, it is possible to advance two more-than-plausible motives for the sluggishness and the weak productivity and competitiveness of the Moroccan economy:

1. The weakness of the education system of the country, which is expressed by the very low level of training and qualifying of its human resources, outside and inside the firms, and
 2. The partitioning of the latter and their tendency to give only a small place to skilled work as well as to the "technology" factor.
- Luksaneeyanawin Polarat et al. (King Mongkut's Institute of Technology Thonburi, Thailand)

The Development of Video eaching Aids for Using Electrical Measuring Instruments (a Case Study)

This research study was aimed to develop a Video Teaching Aid to improve the performance in using Electrical Measuring Instruments by vocational students. Problems of instrument-handling in the reaching and learning situation were investigated. Relevance aspects of the problems were selected to developed a video learning package and have it tested, and evaluated with regard to students' learning achievement and their perception of video production quality.

The Video Teaching Aid was developed by using the technique of: content analysis to select appropriate topics for the lessons, causal sequential technique to organizing teaching contents, media development using picture photo taking from Realm, Model, and from hand drawing together with a computer graphic design. The lessons were presented in the form of a demonstration incorporating with picture narration.

The teaching aid was tested using a purposive random technique with 360 students at 3 academic levels to see students' learning achievement. It was found

from statistical analysis using F-test and T-test that the students' overall learning achievement from the learning package showed a significant difference, at the level 0.05, for the Oscilloscope and Indicating Instruments. Some differences in achievement, however, were also detected varying according to each student's academic level and among the sub-texts of the lessons themselves. The production quality of the video tape was perceived by students as giving average satisfaction for both the package construction and the students' comprehension of the lesson.

- Noguchi, N. and J. Elfick. (UNESCO, Beijing, China)

A report on the *International Training Workshop on Rural Education for Development* - an example of UNESCO's response to the need for educational innovation for sustainable development

This workshop was planned to facilitate exchange of information and experiences on the development of functional literacy to eradicate illiteracy and promote socio-economic development of poor rural areas in developing countries. Participants came from eleven Asian countries and six African countries, the Agricultural University of Hebei (AUH), the State Education Commission of China, and UNESCO.

During "country reports" participants explained the literacy programmes for poor rural areas in their own countries. Participants also learned about programmes run by UNESCO and international institutions including APPEAL's Programmes for the Promotion of Basic Education (UNESCO Bangkok), the Asia/Pacific Cultural Centre for UNESCO (ACCU Japan), and the International Literacy Institute (USA). The workshop evaluation revealed that the most significant benefits from the workshop included sharing experiences from other developing countries, learning from the experiences of African participants, the Chinese attitude towards modernization and the role of the university and community leaders in poverty alleviation.

During "case studies" participants learned of the role of AUH and community leaders in Hebei Province in improving agricultural productivity in the mountainous regions by lectures and field visits to project sites to improve rabbit raising, vegetable growing, tree crops - persimmons and apples, and vegetable seed production. The AUH had to deal with poverty and ignorance of farmers, lack of knowledge of the importance of applying scientific knowledge to farming, lack of scientific data about mountainous areas and distance and primitive conditions. By mobilizing the expertise and enthusiasm of staff and students over some years and by teaching by example AUH had increased the income of poor mountain farmers. In addition farmers had accepted the need for science and technology in farming and have become receptive to the need for more education for themselves and their children. Participants noted the friendly relations between university staff and poor farmers and

were impressed that such well-qualified academics should be so proud of the success of their long-term association with poor farmers. As one participant put it: "We learned that what seems impossible in one country may be possible elsewhere".

- Plienpoo Praophan et al. (King Mongkut's Institute of Technology Thonburi, Thailand)

A Comparative Study of Scientific Approaches to Problem-Solving Ability Achieved from Investigation and Conventional Laboratory Instruction

The essence of this research was to study the differences in problem-solving ability achieved from Conventional and from Investigative Laboratory instruction. The researcher believed that the investigative laboratory approach would yield higher problem-abilities than the conventional one. In order to prove this hypothesis the research designed experimental with 46 technical college students comprising a control and experimental group. Both groups were assigned to study the same contextual information in the different experimental methodologies.

Overall, it was found that the investigative experiment yielded higher problem-solving abilities ($p < 0.05$) than the conventional one. As a hypothesis set, the study showed a statistical difference. In detailed study, the score comparing among the three classified levels indicated that the low achievement students received better improvement than the other two. No significant different in the improvement was found in other areas. However, the observation revealed the fact that the investigative laboratory process created more enthusiasm in team working and more discovery learning.

- Sumalee Chanchalor and N. Sansanwal. (King Mongkut Institute of Technology, Thailand)

Influence of Parents' Educational Level in the Democratic Style of Raising Children

This study has two main purposes:

1. To study the influence of mothers educational level on a democratic style of raising children.
2. To study the influence of fathers' educational level on a democratic style of raising children.

This study revealed that both mothers as well as fathers with a University Certificate or higher educational level were in favour of the democratic style of

raising their children more so than those mothers and fathers whose educational level was Primary School.

- Wang, Chuixi. (Educational Science Research Institute of Jiaozuo, China)

Sustainable Development and Modern Education

This paper is about development strategy for the 21st century. It first discusses sustainable development as a cause which has advantages for generations to come. Modern education is the trend in educational development in the world, which is a basis for an important ingredient of the sustainable development strategy. It puts forward the view that only when the education is itself developed, does the modern education serve the sustainable development strategy. Further it points out that we should strengthen environmental education and reform the modern education in following six aspects. In order to serve sustainable development better, we should renew concepts and establish educational value concepts of sustainable development. Second, we should reform the educational structure and set up a mature environmental education system. Third, we need to change the contents and the methods of teaching environmental teaching in the modern education system. Fourth, we have to improve the campus culture. Fifth, make higher environmental education better equipped to train talented people. Sixth, change modern education to form a new pattern that involves schools society and parents - all taking a part in environmental education.

- Wuthisen, Supol. (Rajabhat Institute Chachoengsao, Thailand)

Cooperation for Mutual Benefit among Asian and Pacific Higher Educational Institutes: Continuing Action Towards Local Independency Development in Asia

A widely recognized need for Asian communities is technological development. However, to import this directly from abroad would not be suitable but rather new technology should be adapted based on an understanding of the cultural implications while striving to keep the cultural uniqueness of our Asian communities intact. More importantly, what is needed is development which will foster independence, that is, complete, or independency development both at the national and local levels.

This report looks at the developing relationship between Asian and Australian institutes of higher education, particularly its role in fostering independency development. Some factors which make Australia a logical choice for educational cooperation are its close proximity to Asia, its well-developed Western culture, its success in industry and agriculture, as well as its abundance of accredited higher education institutions.

A model for international higher education institution relationships which can facilitate independency development is described in this paper. In this model, called the Academic Delivery System, professors and, in turn, students are "delivery persons" or "brokers" who take the "international knowledge" to serve their locality and bring the knowledge gained in the locality back to contribute to the international knowledge, thus creating a two-way process. Within this model, every party is both a contributor and receiver, leading to not only greater understanding and friendship between the countries involved but also meeting the goal of independency development.

CHAPTER NINE

PROGRAMME OF ACTIVITIES

PROGRAMME OF ACTIVITIES

1 December 1997

1.00 - 4.30 p.m.

Registration and distribution of materials

5.00 - 5.45 p.m.

OFFICIAL OPENING

(/see Separate Programme)

Venue: Queen's Park 1 and 2

5.45 - 6.30 p.m.

RAJA ROY SINGH INAUGURAL LECTURE

Educational Innovation for Sustainable Development: Retrospect and Prospect

Federico Mayor
Director-General
UNESCO
Paris

Chairperson: Victor Ordóñez
Director
UNESCO PROAP
Bangkok

Venue: Queen's Park 1

6.30 - 8.30 p.m.

WELCOME RECEPTION

Hosted by Mr. Abhisit Vejjajiva
Minister to the Prime Minister's Office

Venue: Rainbow Room

TUESDAY, 2 DECEMBER

9.00 - 10.30 a.m.

PLENARY PANEL 1

***Educational Innovation for Sustainable Development:
Thematic Resource Papers on Key Issues and Concerns***

Chairperson: Victor Ordonez
Director, UNESCO PROAP
Bangkok

Venue: Queen's Park 1 & 2

1. *Social Issues and Considerations*

Anthony Hewett
UNICEF Representative for Thailand
UNICEF, Thailand

2. *Gender Related Considerations*

Mrs. Savitri Suwansathit
Secretary-General
Thai National Commission for UNESCO
Bangkok

3. *Environmental Issues and Considerations*

Suvit Yodmani
Director and Regional Representative
UNEP, Bangkok

4. *Economic Issues and Considerations*

Michael Heyn
Regional Representative
UNEP, Bangkok

5. *Disadvantaged Groups and Equity Considerations*

Dr. Saisuree Chutikul
Member of the National Education Commission
Bangkok

10.30 - 11.00 a.m.

Morning Break

11.00 - 12.30 p.m.

Roundtable Series I on the Themes of Plenary Panel 1

Roundtable 1: Social Issues

Chairperson: Anthony Hewitt, UNICEF, Bangkok

Discussant: Mr. Nicolas Pron, UNICEF, Bangkok

Venue: Queen's Park 4

Roundtable 2: Gender Issues

Chairperson: Mrs. Savitri Suwansathit,
Thai NATCOM, Bangkok

Discussant: Dr. Daniella Tilbury, Gibraltar

Venue: Saithip 1

Roundtable 3: Environmental Issues

Chairperson: Suvit Yodmani, UNEP, Bangkok

Discussant: Wimala Ponniah, UNEP, Bangkok

Venue: Queen's Park 1

Roundtable 4: Economic Issues

Chair: Michael Heyn, UNDP, Bangkok

Discussant: Mr. Charles Myers, UNDP, Bangkok

Venue: Queen's Park 6

Roundtable 5: Disadvantaged Groups and Equity Issues

Chairperson: Dr. Saisuree Chutikul, ONEC, Bangkok

Discussant: Laeka Piya-Achariya, UNICEF, Bangkok

Venue: Queen's Park 3

12.30 - 2.00 p.m.

Lunch

2.00 - 3.30 p.m.

PLENARY PANEL 2

Educational Innovation for Sustainable Development: Thematic Case Studies in Action

Chairperson: Rupert Maclean
Chief of ACEID
UNESCO PROAP, Bangkok

Venue: Queen's Park 1 and 2

1. Re-engineering Education for Sustainable Development: Innovations in Educational Reform in Thailand

Dr. Rung Kaewdang
Secretary-General
The Office of the National Education Commission
of Thailand, Bangkok

2. Innovation in Education for Environmentally Sustainable Development

Dr. Charles Hopkins
President, Info Green Ltd.
Toronto

3. Innovation in Educational De-Centralization in New Zealand, including Multicultural Education

Dr. Anne Meade
Director
NZCER
Wellington

4. Innovations in Education Management in Selected Countries Experiencing Rapid Transition to Market Economies

Jorge Sequeira
Planning Unit
UNESCO PROAP, Bangkok

**5. Educational Innovation for Sustainable Human
Capacity Building: The Republic of Korea**

Professor Moon Yong-Lin
Department of Education
Seoul National University, Seoul

3.30 - 4.00 p.m.

Afternoon Break

4.00 - 5.30 p.m.

Roundtable Series 2 on the Themes of Plenary Panel 2

Roundtable 1: Re-engineering Education

Chairperson: Dr. Rung Kaewdang, ONEC, Bangkok

Discussant: Dr. Siriporn Boonyananta, ONEC, Bangkok

Venue: Queen's Park 3

Roundtable 2: Environmental Concerns

Chairperson: Dr. Charles Hopkins, E.F.S., Toronto

Discussant: Dr. Angelina Galang, Miriam College,
Manila

Venue: Queen's Park 1

Roundtable 3: Educational De-Centralization

Chairperson: Dr. Anne Meade, NZCER, Wellington

Discussant: Mr. Geoff Haw, Victorian Education
Department, Melbourne

Venue: Queen's Park 4

Roundtable 4: Educational Management

Chairperson: Jorge Sequeira, UNESCO, Bangkok

Discussant: Dr. Suwit Pichayasathit, Northern Regional
NFE Center, Thailand

Venue: Saitip 1

Roundtable 5: Human Capacity Building

Chairperson: Professor Moon Yong-Lin, Seoul National University

Discussant: Professor Chris Selby Smith, Monash University, Melbourne

Venue: Queen's Park 6

WEDNESDAY, 3 DECEMBER

8.00 a.m. - 6.00 p.m.	Concurrent Paper Sessions and Symposia
8.00 a.m. - 6.00 p.m.	Education Fair
10.30 - 11.00 a.m.	Morning Break
12.30 - 2.00 p.m.	Lunch
3.30 - 4.00 p.m.	Afternoon Break

For details of the Concurrent Paper Presentations including times, presenters and venues consult the separate programme schedule and the Paper Abstracts in your agenda papers.

7.00 - 10.00 p.m. **Conference Dinner**

Presentation of ACEID Awards for Excellence in Education

Hosted by Victor Ordonez
Director, UNESCO PROAP

Venue: Queen's Park 2 and 3

Admission by Invitation Card only

THURSDAY, 4 DECEMBER

9.00 - 10.30 a.m.

PLENARY PANEL 3

***Educational Innovation for Sustainable Development:
Thematic Resource Papers on Education for All***

Chairperson: Prein Kasaju
Co-ordinator for APPEAL
UNESCO PROAP, Bangkok

Venue: Queen's Park 1

1. *Literacy, Basic Education and Poverty Eradication*

Mr. D.A. Perera
Member of the Executive Council of Sarvodaya
Colombo

**2. *Attaining the Goals of Education for All: Reaching
the Unreached with Particular Reference to Girls
and Women***

Vibeke Jensen
Specialist in Basic Education for Girls and Women,
APPEAL, UNESCO PROAP, Bangkok

3. *Scientific Literacy for All*

Dr. Tongchai Chewprecha
Director
Institute for the Promotion of the Teaching of
Science and Technology (IPST)
Bangkok

**4. *Decentralized Planning and Management of
Literacy and Basic Education Programmes***

Dr. R. Govinda
Head
National Institute of Educational Planning and
Administration (NIEPA), Delhi

**5. *Community Participation and Empowerment:
A Key to Achieving Education for All***

Professor Soedijarto
Head
Indonesian Learning Materials Development and
Training Centre
Jakarta

10.30 - 11.00 a.m.

Morning Break

11.00 - 12.30 p.m.

Roundtable Series 3 on the Themes of Plenary Panel 3

Roundtable 1: Poverty Eradication

Chairperson: Mr. D.A. Perera, E.C.S., Colombo

Discussant: Mr. Adani J. Kaptigau, Department of
Agriculture, Port Moresby

Venue: Queen's Park 1

Roundtable 2: Reaching the Unreached

Chairperson: Vibeke Jensen, UNESCO, Bangkok

Discussant: Ms. Shaheen A. Rahman, BUNYAD, Lahore

Venue: Queen's Park 3

Roundtable 3: Scientific Literacy

Chairperson: Dr. Tongchai Chewprecha, IPST, Bangkok

Discussant: Dr. Max Walsh, Philippines - Australia
Project in Basic Education, Manila

Venue: Queen's Park 4

Roundtable 4: Decentralized Planning

Chairperson: Dr. R. Govinda, NIEPA, Delhi

Discussant: Dr. Kla Somtrakool, Department of Non-Formal Education, Bangkok

Venue: Queen's Park 6

Roundtable 5: Community Participation

Chairperson: Professor Soedijarto, Jakarta

Discussant: Dr. Chukiat Leesuwat, Chiang Mai University

Venue: Saithip 1

12.30 - 1.30 p.m.

Lunch

1.30 - 3.00 p.m.

PLENARY PANEL 4

**Educational Innovation for Sustainable Development:
Case Studies in Action**

Chairperson: Moegiadi
Director
UNESCO, New Delhi

Venue: Queen's Park 1 and 2

***1. Training of Literacy and Continuing Education
Personnel***

Mr. Kazi Rafiqul Alam
Executive Director
Dhaka Ahsania Mission
Dhaka

***2. Promotion of Literacy and Continuing Education
at the Grassroots Level***

Professor Shakuntala Bapat
Rural Women's Development Centre
Shivapur

3. *Promotion of Primary Education and Literacy in Rural and Disadvantaged Areas in China*

Mr. Zhang Tiedao
Director
Gansu Institute for Educational Research
Lanzhou, Gansu

4. *Enhancing the Quality and Learning Achievements of Children and Youth*

Dr. Minda C. Sutaria, FACEED
Director
SEAMEO INNOTECH
Manila

5. *Science for Rural Primary Schools*

Supote Prasertsri
UNESCO, Phnom Penh

3.00 - 3.30 p.m.

Afternoon Break

3.30 - 5.00 p.m.

Roundtable Series 4 on the Case Studies of Plenary Panel 4

Roundtable 1: Training Literacy Personnel

Chairperson: Mr. Kazi Rafiqul Alam, Dhaka Ahsania Mission, Dhaka

Discussant: Mr. Jose Roberto Guevara, Asian South Pacific Bureau of Adult Education, Quezon City

Venue: Queen's Park 1

Roundtable 2: Literacy at the Grassroots

Chairperson: Professor Shakuntala Bapat, Rural Women's Development Centre, Shivapur

Discussant: Dr. C.L. Sapra, Formerly NIEPA, Delhi

Venue: Queen's Park 3

Roundtable 3: Rural and Disadvantaged Areas

Chairperson: Mr. Zhang Tiedao, Gansu Institute for Educational Research, Gansu

Discussant: Noburo Noguchi, UNESCO, Beijing

Venue: Queen's Park 4

Roundtable 4: Achievements of Children and Youth

Chairperson: Dr. Minda C. Sutaria, SEAMEO INNOTECH, Manila

Discussant: Isabel Byron, IBE, Geneva

Venue: Queen's Park 6

Roundtable 5: Science for Rural Primary Schools

Chairperson: Supote Prasertsri, UNESCO, Phnom Penh

Discussant: Professor Neil Baumgart, University of Western Sydney

Venue: Saithip 1

5.00 - 5.30 p.m

Conference Summation

Professor Phillip Hughes, FACEID
UNESCO Fellow
Australian National University
Canberra

Venue: Queen's Park 1 and 2

5.30 p.m

Conference Close

Victor Ordonez, Director, UNESCO PROAP

Dr. Rung Kaewdang, Secretary-General, ONEC

Venue: Queen's Park 1 and 2

CHAPTER TEN

LIST OF PARTICIPANTS

Australia

Professor Neil Baumgart
Professor of Education
University of Western Sydney
Nepean, P.O. Box 10
Kingswood, NSW 2747

Tel: (61-47) 360-448
Fax: (61-47) 360-400
E-mail: n.baumgart@uws.edu.au

Mr. John Bladen
Director of Training and Development,
School Programs
NSW Department of School Education
Box 33 GPO, Sydney NSW 200

Tel: (61-2) 9561-8256
Fax: (61-2) 9561-8233
E-mail: bladenj@gwise.dse.nsw.edu.au

Mr. Martin Brueckner
Master Student (Management)
Edith Cowan University
5 Nimrod Place, Hillarys
W.A. 6025

Tel: (61-8) 9402-0046
Fax: (61-8) 9447-0217
E-mail:
mbrueckn@scorpion.cowan.edu.au

Ms. Christine Bundesen
Director, Institute of Continuing &
TESOL Education
University of Queensland
St. Lucia, Brisbane 4072
Queensland

Tel: (61-7) 3365-6500
Fax: (61-7) 3365-6599
E-mail: icte@mailbox.uq.edu.au

Mr. Paul Burgis
Doctoral Student/Teacher
University of New South Wales/
Scots College
226 Prices Circuit, Woronora 2232
New South Wales

Tel: (61-2) 9545-5714

Prof. M.A. (Ken) Clements
Professor of Education
Faculty of Education
University of Newcastle
University Drive, Callaghan
New South Wales 2308

Tel: (61-49) 217-081
Fax: (61-49) 216-895
E-mail: edmac@cc.newcastle.edu.au

Dr. Valda Dickinson
Senior Lecturer
Australian Catholic University
179 Albert Road, Strathfield
NSW 2135

Tel: (61-2) 9739-2194
Fax: (61-2) 9739-2105
E-mail: v.dickinson@mary.acu.edu.au

Prof. Nerida F. Ellerton
Dean and Professor of Education
Faculty of Education
University of Southern Queensland
Toowoomba, Queensland 4350

Tel: (61-76) 312-317
Fax: (61-76) 312-828
E-mail: ellerton@usq.edu.au

Professor Paul Hager
Faculty Research Coordinator
Faculty of Education
University of Technology, Sydney
P.O. Box 123, Broadway
NSW 2007

Tel: (61-2) 9514-3826
Fax: (61-2) 9514-3939
E-mail:
Paul.Hager@education.uts.edu.au

Mr. Geoff Haw
Manager, UNESCO Conference
Secretariat
c/o Department of Education
GPO Box 4367
Melbourne Vic. 3001

Tel: (61-3) 9637-3244
Fax: (61-3) 9637-3230
E-mail: geoff.haw@dse.vic.gov.au

Mr. Ian Hind
General Manager, Strategic Planning,
Project Development & Evaluation
Department of Education: Strategic
Planning Programme Development and
Education Division
P.O. Box 4367, Melbourne

Tel: (61-3) 9628-2429
Fax: (61-3) 9628-2875
E-mail: ian.hind@dse.vic.gov.au

Professor Phillip Hughes
Australian National University
5 Liversidge Street
Canberra ACT 0200

Tel: (61-6) 279-8584
Fax: (61-6) 249-4959
E-mail: Phillip.Hughes@anu.edu.au

Prof. John Izard
Assistant Director & Head, International
Development Division, Australian
Council for Educational Research
19 Prospect Hill Road, Camberwell
Melbourne Vic. 3124

Tel: (61-3) 9277-5555
Fax: (61-3) 9277-5500
E-mail: izard@acer.edu.au

Mr. Douglas Maclean
Co Director, Centre for Rural Vocational
Education & Training
University of Melbourne
Glenormiston College
PMB 6200 Terang Vic. 3264

Tel: (61-3) 5557-8200
Fax: (61-3) 5557-8268
E-mail:
d.maclean@landfood.unimelb.edu.au

Professor Leo Maglen
Chair and Head of Department of
Vocational Education and Training
The University of Melbourne
Hawthorn Campus
Locked Bag 12, Hawthorn 3122

Tel: (61-3) 9810-3369
Fax: (61-3) 0810-3170
E-mail: lmaglen@edfac.unimelb.edu.au

Dr. Francis Mangubhai
Head, Centre for Language Learning &
Teaching, University of Southern
Queensland, West Street, Toowoomba
Queensland 4350

Tel: (61-76) 311-804
Fax: (61-76) 311-801
E-mail: mangubha@usq.edu.au

Mr. John Maskell
Coordinator of Indigenous Programs
Centre for Aboriginal and Torres Strait
Islander Participation, Research and
Development, Cairns Campus
James Cook University
P.O. Box 891, Cairns, Queensland 4870

Tel/Fax: (61-7) 4031-1054
E-mail: john.Maskell@jcu.edu.au

Dr. Thomas William Maxwell
Senior Lecturer in Education
University of New England
Department of Education Studies
UNE 2351

Tel: (61-02) 6773-2583
Fax: (61-02) 6773-3350
E-mail: tmaxwell@metz.unc.edu.au

Mr. Denis McLaughlin
P.O. Box 247
Everton Park 4053
Tel: (61-7) 3855-7154
Fax: (61-7) 3855-7337
E-mail: D.McLaughlin@mcavley.acu.au

Mr. Gary James
Teacher/Masters Student
P.O. Box 695, Buderim Qld. 4556

Tel: (61-7) 5476-6090
Fax: (61-7) 5491-8458

Miss Yasuko Nagai
Senior Literacy Consultant
Summer Institute of Linguistics
6 Ashburton Avenue
West Lakes Shore, SA 5020

Tel/Fax: (61-8) 8449-4683
E-mail: edyn@flinders.edu.au

Dr. Kay Owens
Senior Lecturer
University of Western Sydney
Macarthur, P.O. Box 555
Campbelltown, NSW 2560

Tel: (61-2) 9868-5394
Fax: (6102) 9772-1565
E-mail: K.owens@uws.edu.au

Mr. Peter Reynolds
Senior Lecturer Anthropology and
Education
Edith Cowan University
Pearson Street, Churchlands
WA 6018

Tel: (61-8) 9273-8780
Fax: (61-8) 9387-7095
E-mail: p.reynolds@cowan.edu.au

Professor Fazal Rizvi
Faculty of Education
Monash University
Clayton, Victoria 3168

Tel: (61-3) 9905-9194
Fax: (61-3) 9905-9197
E-mail:
f.rizvi@education.monash.edu.au

Ms. Elizabeth Ryan
CIREE, Faculty of Environmental
Sciences, Griffith University
Nathan, QLD 4111

Tel: (61-7) 3875-6716
Fax: (61-7) 3875-7459
E-mail: l.ryan@ens.gu.edu.au

Dr. Shukri Sanber
Senior Lecturer
Australian Catholic University
179 Albert Road, Strathfield
NSW 2135

Tel: (61-2) 9739-2194
Fax: (61-2) 9739-2105
E-mail: S.Sanber@mary.acu.edu.au

Ms. Isabel Sendlak
Lecturer, University of Newcastle
G.P.O. Box 2750, Sydney 2001
Tel/Fax: (61-42) 681-660

Professor Christopher Selby Smith
Department of Management
Faculty of Business and Economics
Monash University
Wellington Road, Clayton
Melbourne 3168

Tel: (61-3) 9905-2466
Fax: (61-3) 9905-5412
E-mail:
Chris.SelbySmith@BusEco.monash.
edu.au

Dr. Beth Southwell
Associate Dean (Staffing and Staff
Development), UWS Nepean
P.O. box 10, Kingswood
NSW 2747

Tel: (61-2) 4736-0258
Fax: (61-2) 4736-0400
E-mail: b.southwell@uws.edu.au

Ms. Suzanne Strangward
National Director
Future Problem Solving Program
Deakin University
Burwood Campus
Burwood, Victoria 3125

Tel: (61-3) 9244-6479
Fax: (61-3) 9244-6484
E-mail: strangw@deakin.edu.au

Dr. Peter Waterworth
Lecturer, Deakin University
221 Burwood Highway
Burwood 3125

Tel: (61-3) 9244-6415
Fax: (61-3) 9244-6751
E-mail: petexx@deakin.edu.au

Professor John Dewar Wilson
Department of Education
Victoria University of Technology
P.O. Box 14428 McMc
Melbourne 8001
Tel: (61-3) 9688-4786
Fax: (61-3) 9688-4646
E-mail: John=Wilson@vut.edu.au

Mrs. Derris Wood
Teacher, Education Department
699 Moorevinne Road
Burnie, Tasmania 1320

Tel: (61-3) 6435-7441
Fax: (61-3) 6431-6060
E-mail: D.Wood@tassie.net.au

Associate Professor Michael Singh
Faculty of Education
Central Queensland University
Rockhampton, Q. 4702

E-mail: m.singh@cqu.edu.au

Mr. Gewa Au
130 Ewing Road
Woodridge 4114, Brisbane

Bangladesh

Mr. Kazi Rafiqul Alam
Executive Director
Dhaka Ahsania Mission
House No. 19, Road No. 12 (New)
Dhanmondi Residential Area
Dhaka 1209

Tel: (880-2) 819-521-22; 912-3420
Fax: (880-2) 813-010; 818-552
E-mail: dambgd@bdonline.com

Dr. William Postma
Country Director
Christian Reformed World Relief
Committee), CRWRC/Bangladesh
G.P.O. 2164, Dhaka

Tel: (880-2) 887-076
Fax: (880-2) 815-076
E-mail: willp@office.pradeshta.net

Ms. Sajeda Begum
Assistant Coordinator
CARE-Bangladesh
House #65, Road #7A
Dhaka

Tel: (880-2) 814-195-98
Fax: (880-2) 814-183
E-mail: carebang@bangla.net

Barbados

Dr. Ancilla Armstrong
Co-ordinator, Human Resources
Development Unit
Caribbean Development Bank
P.O. Box 408, Bridgetown

Tel: (1-246) 431-1600
Fax: (1-246) 426-7269
E-mail: armstrl@caribank.org

Bhutan

Mr. Jagar Dorji
Curriculum Professional Support
Services (CAPSS) Education Division,
Ministry of Education
Thimphu

Fax: 975-2 23550/25086

Brunei

Mr. Stephen Gough
PhD Study/UNESCO-ACEID/Griffith
University Scholarship Holder
University of Bath
P.O. Box 1477
Bandar Seri Begawan 1914

Tel: (673-2) 260-474
Fax: (673-2) 221-579
E-mail: srgeds@brunet.bn

Mr. Ross James Williams
Lecturer, Department of Educational
Foundations
University of Brunei Darussalam
Tungku Link Road
Bandar Seri Begawan

Mr. Noorhaizamdin bin Abdullah @Hj
Mosbi
Senior Education Officer
Department of Technical Education
Ministry of Education
Simpang 347, Gadong 3180
Tel: (673-2) 454-446
Fax: (673-2) 422-300
E-mail: daniza@brunet.bn

Dr. G.B. Gunawardena
University Brunei Darussalam
BSB 2028

Tel: (673-2) 421-773
Fax: (673-2) 427-003

Dr. Abdul Aziz @Franklyn Kaloko
c/o Department of Geography
University of Brunei
Badar Seri Begawan

E-mail: kaloko@ubd.edu.bn

Mr. Arsad Abo Adis
Department of Schools
Ministry of Education
Bandar Seri Begawan

Tel: (673-2) 222-023
Fax: (673-2) 242-252

Cambodia

Mr. So Chhun
Director, Department of Non-Formal
Education, Ministry of Education, Youth
and Sports, Phnom Penh
Mr. Khin Maung Kywe
CTA, CMB/91/009
MOEY/UNDP/UNESCO Project
Phnom Penh

Fax: (855-23) 426-678

Mr. George Taylor
Team Leader, CAMSET II
C/Bt Education Services
Phnom Penh

Tel: (855-23)
Fax: (855-23) 711-114/210-971
E-mail: gened@uni.fi

Dr. Im Koch
Head, Secondary Education Inspection
Office, Ministry of Education, Youth &
Sport, Phnom Penh

Canada

Dr. Charles Hopkins
President, Info Green Ltd.
Toronto

Fax: (1-416) 762-5988
E-mail: chuck_hopkins@edu.yorku.ca

Mr. Charles G. Mossop
UNESCO-EPD Special Adviser
Executive Director
International Education
University College of the Cariboo
P.O. Box 3010
Kamloops, BC V2C5N3

Tel: (1-250) 828-5162
Fax: (1-250) 828-5140
E-mail: cmossop@cariboo.bc.ca

Prof. Egide Royer
Director of Center for Dropout Prevention
(CRIRES)
Faculte des sciences de l'education
Bureau 1250, Universite Laval
Sainte-Foy (Quebec) (G1K 7P4)

Tel: (1-418) 656-7056
Fax: (1-418) 656-7770
E-mail: Egide.Royer@ppg.ulaval.ca

Dr. Douglas H. Crawford
Professor of Mathematics and Education
Queen's University, Kingston
Apt. 101 - 91 King Street East
Kingston, Ontario K7L 2Z8

Tel: (1-613) 542-1020
Fax: (1-613) 545-6584

China

Mr. Du Yue
Director of Education Division
Chinese National Commission for
UNESCO
37 Damucang Hutong
Xidan, 100816 Beijing

Fax: (86-10) 6601-7912

Mr. Zhang Tiedao
Director, Gansu Institute for Educational
Research
425 Binhe Donglu
Lanzhou, Gansu Province 730030

Tel: (86-931) 883-4087
Fax: (86-931) 841-8920, 882-2714

Mr. Ren Changsong
Editor, Curriculum and Teaching
Materials Research Institute
55 Sha Tan Street, Beijing 100009

Tel: (86-10) 6401-6633
Fax: (86-10) 6401-0370

Mr. Sun Yegang
Deputy Director of General Policy
Division

Ms. Li Yuying
Educational College of Shaanxi Province

Ms. Liu Ruping
Educational College of Shaanxi Province

Egypt

Dr. Samir T. IsHak
Professor - Senior Consultant
Social Fund for Development
The American University in Cairo
Road #15 Building 20 Apt. V
Almaadi, Cairo
Tel: (20-2) 351-6137
Fax: (20-2) 355-0628
E-mail: Samirt@acs.auc.eun.eg

Fiji

Mr. Cliff Benson
Director, Institute of Education
University of the South Pacific
P.O. Box 1168
Suva

Tel: (679) 313-900 (2048)
Fax: (679) 302-409
E-mail: Benson_C@usp.ac.fj

Hong Kong, China

Ms. Teresa W.L. Chai
Department of Social Sciences
Hong Kong Institute of Education
Block B-2, Room 5031
10 Lo Ping Road, Taipo, N.T.
Kowloon

Mr. Po Sum Cho
Department of Social Sciences
Hong Kong Institute of Education

Block B-2, Room 5031
10 Lo Ping Road, Taipo, N.T.
Kowloon

Mrs. Hui Tai Mei-har, Jessie
Department of Social Sciences
Hong Kong Institute of Education
Block B-2, Room 5031
10 Lo Ping Road, Taipo, N.T.
Kowloon

Dr. Joe Lo Tin-Yau
Department of Social Sciences
Hong Kong Institute of Education
Block B-2, Room 5031
10 Lo Ping Road, Taipo, N.T.
Kowloon

E-mail: joelo@ss.ied.edu.hk

Dr. Daniella Tilbury
Department of Curriculum Studies
University of Hong Kong
Pokfulam Road

India

Professor C.L. Sapra
Ex-Professor
National Institute of Educational
Planning and Administration
M-146 Greater Kailash
Part II, New Delhi-110048

Tel: (91-11) 648-4424
Fax: (91-11) 623-7915

Mr. M.U. Alam
Project Officer, Centre for Adult &
Continuing Education
University of North Bengal
Raja Rammohunpur: DT. Darjeeling
West Bengal, PIN-734430
Tel: (91-353) 450-465
Fax: (91-353) 450-546

Dr. Tilak R. Kem
Advisor (Administration)
All India Council for Technical Education
Indira Gandhi Sports Complex
I.P. Estate, New Delhi-110002
Tel: (91-11) 337-9024
Fax: (91-11) 337-9964
E-mail: kem@aicte.ernet.in

Mr. R.C. Meena
Director (Planning)
Ministry of Human Resource
Development, Department of Education,
Shastri Bhawan
New Delhi 110-001

Tel: (91-11) 338-7465
Fax: (91-11) 338-6278

Professor Shakuntala Bapat
Indian Institute of Education
J.P. Naik Path, Kothrud
Pune 411 029

Tel: (91-212) 336-980
Fax: (91-212) 335-239

Dr. R. Govinda
National Institute of Educational Planning
and Administration (NIEPA)
17-B Sri Aurobindo Marg
New Delhi-110016

Tel: (91-11) 665-472
Fax: (91-11) 685-3041

Dr. M.J. Ravindranath
Centre for Environment Education
Southern Regional Centre
Kamala Mansion 143 Infantry Road
Bangalore 560001

Tel: (91-080) 286-9094
Fax: (91-080) 286-8209
E-mail: Cee@blr.usnl.net.in

Dr. Kuldeep Agarwal
Deputy Director (Academic)
Board of School Education Haryana
Bhiwani, Haryana 125021

Mr. G. Prasanna Kumar
Chairman, Board of School Education,
Haryana
Bhiwani, Haryana PIN 125021

E-mail: gpkumar@nda.vsnl.net.in
kumarp@mailexcite.co.in

Indonesia

Prof. Dr. H. Soedijarto
Director-General of Out-of-School
Education, Youth and Sports
Jakarta

Fax: (62-21) 573-3127

Prof. Dr. Singgih Dirga Gunarsa
Tarumanagara University
Jl. Letjen. S. Parman No. 1
Jakarta 11440

Tel: (62-21) 567-1774
Fax: (62-21) 568-4057; 560-4478

Drs. Agustinus Kahono
Rector, Tarumanagara University
Jl. Letjen. S. Parman No. 1
Jakarta 11440

Tel: (62-21) 567-1774
Fax: (62-21) 568-4057; 560-4478

Prof. Dr. Dali Santun Naga
Tarumanagara University
Jl. Letjen. S. Parman No. 1

Tel: (62-21) 567-1774
Fax: (62-21) 568-4057; 560-4478

Prof. Edi Hartini Sundoro
Faculty of Dentistry
University of Indonesia
Salemba 4, Karta 10430

Tel: (62-21) 391-3413

Ms. Siti Oemijati Djajanegara
Consultant, Centre for Development and
Research in Higher Education
University of Indonesia
Salemba 4 - Gedung Rektorat Lantai 2,
Jakarta 10430

Tel/Fax: (62-21) 315-3770

Drs. Slamet Koencoro
Lecturer
Akadmi Bahasa (Language Academy)
17 Agustus 1945 Semarang
Jl Seteran Dalam 9, Semarang 50134

Tel: (62-24) 552-474
Fax: (62-24) 552-476

Dr. Jiyono
Director of Educational and Cultural
Research Centre, Ministry of Education
and Culture
Jl.Jend Sudirman, Senayan, Jakarta

Tel: (62-21) 573-6365
Fax: (62-21) 574-1664

Mr. Goeganda Priyatna
Vice President, Asian Confederation of
Teacher (ACT/WCT/WCL)
Jln. Saturnus 5 Turangga
Bandung 40275

Tel: (62-22) 304-560
Fax: (62-22) 420-3125

Iran

Prof. Hossein Bahrainy
Dean, Faculty of Environment
University of Tehran
25 Qods Avenue
Tehran

Tel: (98-21) 640-4647
Fax: (98-21) 658-111

Dr. M. Tabibian
Associate Professor
Faculty of Environment
University of Tehran
25 Qods Avenue, Tehran

Tel: (98-21) 640-7712
Fax: (98-21) 658-111

Dr. Mohmoud Mehr Mohammady
Head, Institute for Educational Research,
Ministry of Education
196 Kashavarz Blvd.
Teheran 14166

Italy

Dr. Loy Van Crowder
Agricultural Education Officer
Food and Agriculture Organization of the
United Nations
Viale delle Terme di Caracalla
00100 Rome

Tel: (39-6) 5705-3445
Fax: (39-6) 5705-5731

Japan

Prof. Kazuo Ishizaka
Director, International Exchange
Division, Shotokugakuen Gifu
University for Education Languages
509-1 Shinomiya
Hiratsuka City, Kanagawa-Ken 254

Tel/Fax: (81-463) 53-2580
E-mail: ishi@gifu-kyoiku.ac.jp

Mr. Takashi Ueda
Executive Secretary
Japanese National Commission for
UNESCO, Ministry of Education,
Science, Sports and Culture
3-2-2 Kasumigaseki, Chiyoda-ku
Tokyo 100

Tel: (81-3) 3881-2174
Fax: (81-3) 3581-9149

Prof. Shuichi Nakayama
Graduate School for International
Development and Co-operation
Faculty of Education
Hiroshima University
1-1-2 Kagamiyama, Higashi-Hiroshima-
shi 739
Tel: (81-824) 246-759
Fax: (81-824) 227-171

Ms. Noriko Nakayama
M.A. Student
Graduate School for Education
Faculty of Education
Hiroshima University
1-1-2 Kagamiyama, Higashi-Hiroshima-
shi 739

Ms. Kyoko Tomita
M.A. Student
Graduate School for Education
Faculty of Education
Hiroshima University
1-1-2 Kagamiyama, Higashi-Hiroshima-shi 739

Ms. Aya Sasaki
PhD Student, Graduate School for
International Development and Co-
operation, Faculty of Education
Hiroshima University
1-1-2 Kagamiyama, Higashi-Hiroshima-shi 739

Ms. Emiko Masujima
PhD Student
Graduate School for International
Development and Co-operation
Faculty of Education
Hiroshima University
1-1-2 Kagamiyama, Higashi-Hiroshima-shi 739

Mr. Eiichiro "Atom" Harako
Lecturer, Field Studies Institute for
Environmental Education
Tokyo Gakugei University
4-1-1 Nukuikita-machi
Koganei, Tokyo 184

Tel: (81-423) 297-668
Fax: (81-423) 297-669
E-mail: atom@fsifee.u-gakugei.ac.jp

Mr. Toshiki Ikeya
c/o E. Atom Harako
Field Studies Institute for Environmental
Education, Tokyo Gakugei University
4-1-1 Nukuikita-machi
Koganei, Tokyo 184

Mr. Kozi Hayasi
Associate Curator, Department of
Education and Public Services
Natural History Museum and Institute
955-2 Aoba, Chuo-ku, Chiba 2608682

Tel: (81-43) 265-3111
Fax: (81-43) 266-2481
E-mail: mgg0124@niftyserve.or.jp

Latvia

A/P Dr. Iga Salite
Dean of the Pre-school and Primary
School Pedagogical Faculty
Daugavpils Pedagogical University
Parades 1, Daugavpils
LV 5407

Tel: (371-54) 28-636
Fax: (371-54) 22-890
E-mail: ilga@linux.cs.dpu.lv

Lao PDR

Mr. Chandy Phommabouth
Deputy Director
Teacher Training Department
Ministry of Education
Vientiane

Tel: (856-21) 216-615
Fax: (856-21) 212-108

Mr. Khamhoung Sacklokham
Acting Director, Department of Pre-
School and General Education
Ministry of Education
Vientiane

Tel: (856-21) 215-423, 212-037
Fax: (856-21) 216-006

Malaysia

Dr. Wan Chik Rahman Wan Din
Principal Assistant Director
Educational Planning & Research
Division, Ministry of Education
Level 2 Block J(s)
Pusat Bandar Damansara
50604 Kuala Lumpur

Tel: (663) 255-6900
Fax: (663) 255-4960
E-mail: wanchik@cprd.kpm.my

Dr. Jamaludin Mohaiadin
Center for Educational Technology and
Media, Universiti Sains Malaysia
11800 Penang

E-mail: mjamal@usm.my

Maldives

Ms. Aishath Mohamed Didi
Teacher Educator Co-ordinator
Institute for Teacher Education
Salaahuddeen Bldg.
Amceene Magu, Male

Tel: (960) 322-566
Fax: (960) 313-425

Mr. Ahmed Ali Maniku
Director
Institute for Teacher Education
Salaahuddeen Bldg.
Amceene Magu, Male

Tel: (960) 323-172
Fax: (960) 313-425

Maroc

Prof. Mehdi Lahlou
Institut National de Statistique
et d'Economie Appliquee (INSEA)
B.P. 6217, Madinat Al Irfane
Rabat-Instituts, Rabat
Tel: (212-7) 774-859/60
Fax: (212-7) 779-457

Mongolia

Dr. Dendeviin Badarch
President, Mongolian Technical
University
P.O. Box 46/672
Oulan Bator

Fax: (976-1) 324-121
E-mail: badarch@magicnet.mn

Mrs. E.B. Badarch
c/o Dr. Dendeviin Badarch
Mongolian Technical University
P.O. Box 46/672
Oulan Bator

Nepal

Ms. Allison Lane Smith
Program Officer
World Education, Inc
44 Farnsworth Street
Boston, MA 02210 (after Conf.)

World Education - Kamal Pokhari
P.O. Box 937, Kathmandu

Tel: (977-1) 415-790
(61-7) 482-9485
Fax: (977-1) 415-303
(61-7) 482-0617

Mr. Laba Prasad Tripathi
Acting Regional Education Director
Regional Education Directorate, Eastern
Zone, Debrebash, Dhankuta

Tel: (977-26) 20-220
Fax: (977-1) 412-460

Netherlands

Mr. Adrianus Boeren
Senior Adviser
Nuffic/DESC
P.O. Box 29777
2502 LT The Hague

Tel: (31-70) 426-0291
Fax: (31-70) 426-0299
E-mail: aboeren@nuffic.nl

New Zealand

Dr. M.A. Barker
Senior Lecturer in Science Education
School of Education
University of Waikato
Private Bag 3105, Hamilton

Tel: (64-7) 838-4500
Fax: (64-7) 838-4555
E-mail: mbarker@waikato.ac.nz

Dr. Johanna Rosier
Senior Lecturer, Department of Resource
and Environmental Planning
Massey University
Private Bag 11222, Palmerston North

Tel: (64-6) 350-4374
Fax: (64-6) 350-5689
E-mail: D.J. Rosier@massey.ac.nz

Dr. Anne Meade
Director, New Zealand Council for
Educational Research
P.O. Box 3237, Wellington

Tel: (64-4) 384-7939
Fax: (64-4) 384-7933
E-mail: anne-mead@nzcer.org.nz

Norway

Ms. Ellen Carm
LINS/Ass.Professor
Oslo College, Pilestredet 40
0167 Oslo

Tel: (47-2) 245-2114
Fax: (47-2) 245-2135
E-mail: Ellen.Carm@lu.hioslo.no

Pakistan

Ms. Anila Asghar
Faculty Member
Ali Institute of Education
Shahrah-e-Roomi
Lahore-54600

Tel: (92-42) 851-174, 852-023
Fax: (92-42) 586-8525
E-mail: aie@lhr.comsats.net.pk

Mr. Irfan Muzaffar
Faculty Member
Ali Institute of Education
Shahrah-e-Roomi
Lahore-54600

Tel: (92-42) 851-174, 852-023
Fax: (92-42) 586-8525
E-mail: aie@lhr.comsats.net.pk

Ms. Sarah Magrabi
Faculty Member, Ali Institute of
Education, Shahrah-e-Roomi
Lahore-54600

Tel: (92-42) 851-174, 852-023
Fax: (92-42) 586-8525
E-mail: aie@lhr.comsats.net.pk

Dr. Shahid Siddiqui
Institute for Educational Development
Aga Khan University

F-B Area Karimabad, Karachi

Tel: (92-21) 634-7611
Fax: (92-21) 634-7616
E-mail: shahid.siddiqui@aku.edu

Mr. Shaheen Atiq-ur-Rehman
Executive Director
Bunad Literacy and Community Council
- Research Centre
E-105/a-9, Gulgusht Colony
Main Boulevard Devence
Lahore Cantt.
Tel: (92-42) 667-0887
Fax: (92-42) 666-1817
E-mail: sar@bunad.sdnpc.undp.pk

Papua New Guinea

Mr. Joseph A. Kaptigau
Director, Human Resources Management
& Administrative Services, Department of
Agriculture & Livestock
P.O. Box 417, Konedobu

Tel: (675) 323-0200
Fax: (675) 323-0563

Mr. Phillip Pondikou
Acting Director, Agriculture, Education &
Training Division, Department of
Agriculture & Livestock
P.O. Box 417, Konedobu

Philippines

Dr. Marina O. Abella
Dean, College of Arts & Sciences
Lyceum-Northwestern
Tapuac District, Dagupan City

Tel: (63-75) 522-8330
Fax: (63-75) 522-1907

Mr. Julio P. Agarano
Project Manager,
AGRITEC Project, EDPITAF-DECS
Meralco Ave., U.L. Complex
University of Life Complex
Pasig City 1600

Tel/Fax: (63-2) 635-3605
E-mail: mtorres@mailcity.com

Dr. Victoria A. Aguas
Asst. Schools Division Superintendent
DECS, Division of Angeles City
Pulungbulo, Angeles City

Tel: (63-455) 602-5722
Fax: (63-455) 602-4702

Dr. Helmare E. Aguilar
President, Aklan State College of
Agriculture
Banga, Aklan

Tel/Fax: (63-36) 268-5801

Dr. Evelyn A. Bagadiong
Director, Curriculum & Instructional
Media Center; Professor, Catanduanes
State Colleges
Virac, Catanduanes

Tel/Fax: (63-) 811-1485

Sr. Ma. Myrna C. Bas
Superior/Directress
Santa Isabel College
210 Taft Avenue, Manila

Tel: (63-2) 525-9416
Fax: (63-2) 524-7340

Sr. Freida P. Benitez
President, Colegio de San Jose and
Colegio del Sagrado Corazon de Jesus
E. Lopez Street, Jaro, Iloilo City 5000

Tel: (63-33) 320-4605
Fax: (63-33) 320-4650

Dr. Aida C. Caluag
Professor, Education Department
Ateneo de Manila University
Loyola Heights, Quezon City

Tel: (63-2) 924-4492/924-4601
Fax: (63-2) 924-4492/924-4690
E-mail: aida@pusit.admu.edu.ph

Dr. Cornelio D. Carta
Chief, Education Supervisor
Non-formal Education Division
DECS, Cordillera Administrative Region,
Wangal, La Trinidad, Benguet
Fax: (63-) 442-7819

Dr. Emmanuel G. Cleto
Wesleyan University
Cabanatuan City

Mrs. Nelya N. Cleto
Wesleyan University
Cabanatuan City

Sr. Nicole de Marie Dabalus
Principal, St. Paul College
Pasig, St. Paul Road cor. Meralco
Avenue, Pasig City

Tel: (63-2) 631-1835
Fax: (63-2) 632-9911

Ms. Edith de la Cruz
Environmental Curriculum Development
Member, Miriam P.E.A.C.E.,
Environmental Education and Research
Center (EERC)
Miriam College, Katipunan Avenue,
Loyola Heights, Quezon City

Tel: (63-2) 927-2421 loc. 213 or 229
Fax: (63-2) 426-0169

Ms. Merrill Ewert
Aboitiz Development Studies Center
Cebu City

E-mail: merrill@gsilink.com

Sr. Asuncion G. Evidente
Superintendent of DC Schools/President,
Concordia College
1739 Pedro Gil Street, Paco
Manila

Tel: (63-2) 563-6690, 564-2001/2
Fax: (63-2) 563-4352

Mrs. Amelyn I. Felix
DECS

Dr. Ma. Lilia A. Gaduyon
Consultant for the Visayas
Commission on Higher Education
21 M.H. del Pilar Street
Jaro, Iloilo City

Tel: (63-33) 75-694

Dr. Angelina Galang
Vice President (Academic Affairs)
Miriam College, Katipunan Road
Quezon City

Tel: (63-2) 927-2421 loc. 203
Fax: (63-2) 426-0169

Prof. Enrico B. Garcia
Faculty, Social Science Department
Philippine Normal University

Dr. Ma. Socorro C. Gicain
Head, Social Sciences Department
Leyte Institute of Technology
Tacloban City, Leyte

Tel: (63-) 325-7636
E-mail: lit@mozcom.com

Dr. Paraluman R. Giron
DECS, National Capital Region
Division of City Schools
4/F Manila City Hall
Manila

Tel: (63-2) 527-4969
Fax: (63-2) 527-5180

Mr. Jose Roberto Guevara
Regional Coordinator
Environmental Education Program
Asian South Pacific Bureau of Adult
Education (ASPBAE)
c/o Center for Environmental Concerns -
Philippines
175-B Kamias Road Extension
Quezon City 1102

Tel: (63-2) 920-0900
Fax: (63-2) 921-1531
E-mail: cec@gaia.psdn.ipil.net

Dr. Leticia Hayag
DECS

Dr. Leonora B. Ignacio
Superintendent, Division of Cavite
Department of Education, Culture and
Sports, Trece Martires City

Tel: (63-46) 419-0482

Dr. Lourdes M. Javier
President/Directress
San Lorenzo Ruiz Center of Studies and
Schools, Villa de San Lorenzo
St. Dominic Corinthian Annex
Dolores, San Fernando
Pampanga 2000

Tel: (63-) 961-1091/92
Fax: (63-) 961-5844

Dr. Vilma L. Labrador
Director III
DECS - Region III
Maimpis, San Fernando
Pampanga

Tel: (63-2) 527-4969
Fax: (63-2) 527-5180

Dr. Florica C. Leuterio
Divine Word College of Calapan
Calapan, Oriental Mindoro

Mr. Ronald Alan Mabunga
Philippines Normal College
College of Arts and Sciences
Department of Social Science
Taft Avenue, Manila

Mr. Oscar S. Manalo
Superintendent, Division of Batangas
Department of Education, Culture and
Sports, Batangas City

Tel: (63-) 723-2816

Mrs. Corazon S. Manalo
Education Supervisor
Department of Education, Culture and
Sports
Misamis Street, Bago Bantay
Quezon City

Tel: (63-2) 929-4345
Fax: (63-2) 928-0104

Sr. Ma. Corazon P. Manalo
Institutional Coordinator for Academic
Affairs & Superintendent for Daughters
of Charity Schools in Bicol Region,
Colegio de Sta. Isabel
Elias Angeles Street
Naga City 4400,

Tel: (63-54) 738-417
Fax: (63-54) 739-219
E-mail: oeur@mozcom.com

Prof. Antonio B. Mendoza
President
Eastern Samar State College
Borongan, Eastern Samar

Tel: (63-55) 261-2500
Fax: (63-55) 261-2725

Dr. Lily G. Mendoza
Subject Area Chairman
College of Education
St. Paul University
Tuguegarao, Cagayan

Tel: (63-78) 844-1863
Fax: (63-78) 846-9196
E-mail: Angela@stii.dost.gov.ph

Ms. Fatima Socorro Montnces-Quianzon
Instructor II
Leyte Institute of Technology
Tacloban City, Leyte
Tel: (63-) 321-2184/321-3335
E-mail: lit@mozcom.com

Dr. Jose P. Nagayo
Dean, Graduate School
Philippine Women's University
Taft Avenue, Manila

Tel: (63-2) 526-8421
Fax: (63-2) 526-6935

Rev. James A. O'Donnell
Assistant Dean, Graduate School of Arts
& Sciences
Ateneo de Manila University
P.O. Box 154, Manila 1099

Tel: (63-2) 924-4601 loc 2166/67
Fax: (63-2) 924-3924
E-mail: jod@pusit.admu.edu.ph

Ms. Teresa M. Oliva
Administrative Assistant to the Vice-
President for Academic Affairs
VPAA Office, Miriam College
Katipunan Avenue, Loyola Heights
Quezon City

Tel: (63-2) 927-2421 loc. 204
Fax: (63-2) 426-0169
E-mail: eerc@gaia.padn.iphil.net

Dr. Lydia H. Orolfo
Director III, Commission on Higher
Education
2F Jollibec Center, San Miguel Ave.
Pasig City

Tel: (63-2) 633-1981
Fax: (63-2) 633-1980

Prof. MA. Victoria G. Padilla
President, Namei Polytechnic Institute
123 A. Mabini Mandaluyong City

Tel: (63-) 531-7328
Fax: (63-) 890-5758
E-mail: estrella@pworld.net.ph

Dr. Bernardino A. Perez
Professor Member
World Future Society
10 Fordham Street, White Plains
Quezon City, Metro Manila

Tel: (63-2) 911-5580
Fax: (63-2) 725-5056
E-mail: bernistat@vasia.com
Dr. Zenaida P. Pia
Professor 6, Polytechnic University of
the Philippines
Sta. Mess, Manila

Tel: (63-2) 716-7832

Ms. Lilibeth C. Pinpin
Faculty Member and Researcher
Miriam College Foundation
Katipunan Road, Loyola Heights
Diliman, Quezon City

Tel: (63-2) 927-8581
Fax: (63-2) 426-0169
E-mail: ahm@unforgettable.com

Sr. Josefina R. Quiachon
President
Secred Heart College
1 Merchan Street
Lucena City

Tel: (63-) 712-325
Fax: (63-) 373-4240

Dr. Virginia P. Resurreccion
Director III, Office of Student Services,
Commission on Higher Education
5th Floor, DAP Bldg.
San Miguel Ave., Pasig City

Tel/Fax: (63-2) 434-3657

Dr. Enrica Santos Reyes
Regional Director
Commission on Higher Education
Regional office III
Baliti, San Fernando
Pampanga

Tel: (63-) 961-2131/961-3847
Fax: (63-) 961-5844

Prof. Cynthia Luz P. Rivera
Faculty Member, Languages/Literature
Department, Faculty of Arts and Letters,
University of Santo Tomas
España, Manila 1008

Tel: (63-2) 731-4003
Fax: (63-2) 732-7485
E-mail:
Cynthia.Rivera@ustcc.ust.edu.ph

Sr. Sonia A. Rocha
Superintendent of Daughter Charity
Schools (Eastern Visayas)
Daughters of Charity of St. Vincent de
Paul, Prov'l. House
8486 East Service Road, Km. 18 South
Superhighway, Paraneque, Metro Manila

Tel: (63-2) 837-1008/837-0616
Fax: (63-2) 823-8987

Dr. Defralino O. Ruiz
Budget Officer III
Aklan State College of Agriculture
Banga, Aklan

Tel/Fax: (63-36) 268-5801

Dr. Minda C. Sutaria
Director, INNOTECH
INNOTECH Building
Commonwealth Avenue
Diliman, Quezon City

Tel: (63-2) 924-7681; 928-7676
Fax: (63-2) 921-0224; 928-7692

Dr. Karen Tamayo
University of Perpetual Help System
PHC Compound, Sto.
Laguna

Tel/Fax: (63-49) 511-8641

Dr. Librada M. Tan
School Division Superintendent
DECS Division of Cabanatuan City
Cabanatuan East Central School
Compound, Cabanatuan City

Tel: (63-44) 463-1627
Fax: (63-44) 463-7334

Dr. Carmencita P. Tosco
Non-formal Supervisor
Department of Education, Culture and
Sports

Dr. Angelina B. Torres
District Supervisor
Department of Education, Culture and
Sports

Dr. Max Walsh
Adviser in Pre-Service Teacher Education
PROBE (Project in Basic Education)
P.O. Box 13617
Ortigas Center, Pasig City 1606

Tel: (63-2) 631-5270
Fax: (63-2) 631-5267
E-mail: maxwalsh@skynet.net

Dr. Antonio J. Zaragoza
DECS, Department of Education, Culture
and Sports
University of Life Complex
Meralco Avenue, Pasig
Metro Manila

Tel: (63-2) 632-7586
Fax: (63-2) 633-7236

Ms. Manolita C. Antoja
Miriam P.E.A.C.E.
Miriam College Foundation
Loyola Heights, Diliman
Quezon City
Tel: (63-2) 920-5093

Ms. Amilyn I. Felix
Guidance Counselor and NFE
Coordinator, Baco National High
School, DECS Division of Cavite
20 Sinegnilasan Baco
Cavite 4102

Dr. Hilario D. Garcia
Public Schools District Supervisor
DECS, Balanga Elementary School
Balanga, Bataan

Dr. Leticia C. Hayag
Principal III
Emiliano Tria Tirona
Memorial National High School
Kawit, Cavite

Ms. Barbara A. Lupisan
Department of Education Culture and
Sports, Trece Martirez City
Cavite

Tel: (63-46) 437-8140

Ms. Elizabeth P. Melchor
Registrar/Math Coordinator
Assumption College
San Lorenzo Drive
Makati, Metro Manila
Tel: (63-2) 817-0757
Fax: (63-2) 817-7773
E-mail: slcmelch@ac_office.
assumption.edu.ph

Dr. Divina E. Ramirez
District Supervisor
DECS, District of Maragondon
Maragondon, Cavite
Tel: (63-46) 412-0715

Dr. Purisima R. Remorin
Director, Regional Science Teaching
Center, West Visayas State University
La Paz, Iloilo City 5000

Miss Amelia R. Robles
Education Supervisor
DECS - Division Office
Capitol Drive, Balanga, Bataan

Dr. Ricardo A. Wagan
President, Laguna State Polytechnic
College, Siniloan, Laguna

Tel: (63-49) 536-0063

Ms. Ana P. Ebo
Project Officer, NCC-WS
DIWA - Philippine Women's University
Taft Avenue, Manila

Tel: (63-2) 521-3383, 524-2857
Fax: (6-2) 522-4002
E-mail: diwa@linux1.pwu.edu.ph

Sr. Maria Evelyn C. Aguilar
Chairperson: RVM Commission on
Education, Religious of the Virgin Mary,
RVM Generalate
214 N. Domingo Street
Quezon City

Tel/Fax: (63-2) 721-8030

Sr. Ma. Jacinta de Belen
Superintendent of RVM Schools in
Luzon, RVM Commission on Education,
RVM Regional House
1655 Singalong Street, Paco
Manila

Tel/Fax: (63-2) 521-4652

Sr. Ma. Elna C. Del Mar
Religious of the Virgin Mary
214 N. Domingo, Quezon City

Tel/Fax: (63-2) 721-8023

Sr. Maria FE D. Gerodias
Regional Superintendent
RVM Commission on Education
RVM Regional House
104 F. Ramos, Cebu City

Tel/Fax: (63-32) 253-6486

Sr. Ma. Alice Tan
School Directress
St. Mary's College
Meycauayan, Bulacan

Sr. Ma. E.P. Paderwal
RVM Regional Superintendent for
Mindanao, RVM Commission on
Education
536 Manga Road (Juna Sub-division)
Mindanao

Tel/Fax: (63-82) 298-1939

Sr. Ma. Lourdes Palacio
Assistant Chairperson
RVM Commission on Education
Religious of the Virgin Mary (RVM)
214 N. Domingo, Quezon City

Tel: (63-2) 725-3578

Sr. Patria C. Painaga
President, San Pedro College, Inc.
12 C. de Guzman Street
800 Davao City
Fr. Nello C. Bulawan, OFM
Superintendent of Franciscan (OFM)
Schools, Our Lady of the Angels
Seminary, Novaliches, Quezon City

Tel: (63-2) 936-4083
Fax: (63-2) 937-9321

Republic of Korea

Prof. Kiok Yoon
Director, Elementary Education Research
Center & Head, Foreign Affairs
Committee, Incheon National University
of Education
Kyesan-Dong, Kyeyang-Ku
Incheon 409-953

Tel: (82-32) 540-1308
Fax: (82-32) 540-1344

Prof. Moon Yong Lin
Presidential Commission on Education
Reform
117 Chang Sung-Dong, Chongno Ku
Seoul 110 034

Tel: (82-2) 735-0619
Fax: (82-2) 734-3883; 736-9981

Singapore

Ms. Shelley Gonzales
Regional Representative - S.E. Asia
International Baccalaureate Asia-Pacific,
c/o United World College of S.E. Asia,
Pasir Panjang
P.O. Box 15, Singapore 911121

Tel: (65) 776-0249
Fax: (65) 778-5846
E-mail: ibap@ibo.org
shelley@singnet.com.sg

Mr. John Goodban
Regional Director
International Baccalaureate Asia-Pacific,
c/o United World College of S.E. Asia,
Pasir Panjang
P.O. Box 15, Singapore 911121

Tel: (65) 776-0249
Fax: (65) 778-5846
E-mail: ibap@ibo.org

Dr. Yeoh Oon-Chye
School of Science, National Institute of
Education, Nanyang Technological
University
469 Bukit Timah Road
Singapore 259756
Tel/Fax: (65) 458-9657

South Africa

Dr. Danie Schreuder
University of Stellenbosch
Stellenbosch

Mr. Solly Mosdi
Department of Environmental Affairs and
Tourism
Private Bag X447, Pretoria 0001

Spain

Mr. Servando Perez-Dominguez
University of Santiago de Compostela
Facultas de Ciencias de la Educacion
Dpto de Teoria e Historia de la
Educacion,

Campus Sur
15706 Santiago de Compostela

Tel: (34-81) 563-100 ext. 13753
Fax: (34-81) 530-438
E-mail: heservan@usc.es

Sri Lanka

Mr. D.A. Perera
38 Second Lane
Ratmalana

Fax: (94-1) 605-146

Thailand

Dr. David T. Brown
Associate Professor
Environmental Policy Institute
Brock University (after April 1998)
St. Catharines, Ontario, Canada L2S
3A1, c/o CIET, Burapha University
Bangsaen, Chonburi 20131

Tel: (66-38) 745-900 ext. 4709/4711
Fax: (66-38) 745-810
E-mail: dbrown@bucc.buu.ac.th

Dr. Mathana Santiwat
VP for Academic Affairs
Bangkok University
Rama IV Road, Klong-Toey
Bangkok 10110

Tel: (66-2) 249-9936
Fax: (66-2) 240-1819
E-mail: mathana@lily.bu.ac.th

Mr. Kla Somtrakool
Director, Educational Science Centre
Department of Non-formal Education
Sukhumvit Road, Bangkok 10110

Mr. Suthep Pongsriwat
President
Rajabhat Institute Chiang Rai
Muang District, Chiang Rai 57000

Tel: (66-53) 793-000
Fax: (66-53) 793-001

Mr. Metta Wongsiri
Senior Architect
Woods Bagot (Thailand) Ltd.
287 Liberty Square L. 12
Silom Road, Bangrak
Bangkok 10500

Tel: (66-2) 631-1860
Fax: (66-2) 631-1849
E-mail: tjbw@ksell.th.com

Ms. Sarah Louise Heyes
Environmental Education Officer - SEED
Project
Population and Community Development
Association
8 Sukhumvit Soi 12
Bangkok 10110

Tel: (66-2) 229-4611 ext. 712
Fax: (66-2) 229-4632
E-mail: pda@mozart.inet.co.th

Ms. Suchata Jinachitra
Program Director
The Thailand Research Fund
19th Floor, Gypsum Metropolitan Tower
539/2 Sri-Ayudhaya Road
Rajdhavce, Bangkok 10400

Tel: (66-2) 642-5186-9
Fax: (66-2) 642-5190
E-mail: vicharn@mozart.inet.co.th

Ms. Darad Moogdaudom
Supervisor, Office of the Private
Education Commission
Supervisory Unit, Ministry of Education,
Rachadamnoen-Nok Avenue, Bangkok
10300

Tel: (66-2) 628-5061
Fax: (66-2) 282-3183

Mr. Richard Dawson
Environmental Education Adviser
Department of Environmental Quality
Promotion
60/1 Soi Phiboon Wattana 7
Rama 6 Road, Bangkok 10400

Tel/Fax: (66-2) 279-4791
E-mail: richardd@environnet.dcpp.go.th

Sr. Mayflor Diacuna, DC
Coordinator, Daughters of Charity
P.O. Box 14, Ronphibun
Nakhonsithamarat 80130

Tel: (66-075) 441-133
Fax: (66-075) 441-444

Assoc. Prof. Wannee Somprayoon
Head, Division of Elementary Education,
Faculty of Education
Srinakharinwirot University
163 Sukhumvit Road 50
Prakanong, Klongtoey
Bangkok 10250

Tel: (66-2) 331-3203, 331-3241

Dr. Suwarsih Madya
Educational & Cultural Attache
Indonesian Embassy
600-602 Petchburi Road
Bangkok 10400
Tel: (66-2) 252-3135-50
Fax: (66-2) 255-1267

Prof. Dr. Suchart Somprayoon
Emeritus Professor of Health Education,
Chulalongkorn University
163 Sukhumvit Road 50
Prakanong, Klongtoey
Bangkok 10250

Tel: (66-2) 331-3203, 331-3241

Assist. Prof. Dr. Aimutcha
Wattanaburanon
Health Education Lecturer
Faculty of Education
Department of Physical Education
Chulalongkorn University
Patoomwan, Bangkok 10330

Tel: (66-2) 218-2800

Ms. Supa Patawepaisit
Training Officer, Training Division
Department of Livestock Development
69/1 Phya Thai Road
Rajthevee, Bangkok 10400

Tel: (66-2) 254-2664-5
Fax: (66-2) 251-5651

Dr. Chukiat Leesuwana
Associate Professor, Faculty of
Education, Chiang Mai University
Chiang Mai 50200

Tel: (62-53) 94-4222
Fax: (62-53) 221-283

Asst. Prof. Kanungnit Papatwibul
Dean, Faculty of Science
Naresuan University
Phitsanulok-Nakornsawan Road
Muang District, Phitsanulok 65000

Tel: (66-55) 261-023
Fax: (66-55) 261-025
E-mail: kanungnit@nu.ac.th

Asst. Prof. Dr. Ratana Sananmung
Associate Dean, Faculty of Science
Naresuan University
Phitsanulok-Nakornsawan Road
Muang District, Phitsanulok

Tel: (66-55) 261-027
Fax: (66-55) 261-025
E-mail: ratanas@nu.ac.th

Canadian Education Centre
(Baisri Kanchanaraphi, Acting Manager,
Head Couns.)
Education Promotion, Group/Indiv.
Programmes, 12th Floor, Boonmitr
Building, 138 Silom, Bangkok

Tel: (66-2) 267-0535
Fax: (66-2) 267-0536
E-mail: baisri.kanchanaraphi@
bngkk01.x400.gc.ca

Ms. Savitree Srisuk
Dept. Environmental Quality Promotion
60/1 Soi Piboon Wattana 7
Rama 6, Bangkok

Tel/Fax: (66-2) 279-4791
E-mail: Savitree@environnet.deqp.
go.th

Ms. Anne Klaassens
Linguist/Literacy Specialist
Payap University and the Summer
Institute of Linguistics
P.O. Box 246, Chiang Mai 50000

Tel: (66-53) 302-499
Fax: (66-53) 248-603
E-mail: Anne_Klaassens@sil.org

Australian International Education
Foundation, Australian Embassy
37 South Sathorn, Bangkok

Tel: (66-2) 287-2680
Fax: (66-2) 287-1892
E-mail: aief@external.ait.ac.th

Dr. Sudhiporn Patumtaewapibal
Director, Technical Information Access
Center
73/1 Rama VI Road
Rajdhavee, Bangkok 10400

Tel: (66-2) 664-8030 ext. 733
Fax: (66-2) 644-8038
E-mail: sudhipor@smile.tiac.or.th

Dr. Pairat Sanguansai
Vice President for Academic Affairs
Prince of Songkla University
71/1 Kanjanavanich Road
Haat Yai, Songkhla 90110

Tel: (66-74) 212-821-2
Fax: (66-74) 212-821
E-mail: spairat@ratree.psu.ac.th

Ass. Prof. Sumanin Rungruangtham
Head, Department of Curriculum and
Instruction Department, Faculty of
Education, Srinakharinwirot University
35/1 Soi Pipat II, Convent Road,
Bangkok 10500

Tel: (66-2) 258-3997 Ext. 19
Fax: (66-2) 636-6022

Dr. Bang-on Pantong
Lecturer, Faculty of Education
Srinakharinwirot University
54/81 Pattawikhorn 11, Nawamin Road,
Bangkapi, Bangkok 10230

Tel: (66-2) 258-3997 Ext. 19

Ms. Oravarn Sammapan
Lecturer, Srinakharinwirot University
21 Polo Club Lane
Wireless Road, Bangkok 10330

Tel: (66-2) 258-3997 Ext 5560
Fax: (66-2) 251-6072

Dr. Punya Kaewkeeyoon
Educational Supervisor
Office of the National Primary Education
Commission
Ministry of Education
Dusit, Bangkok 10300

Tel: (66-2) 281-0916, 280-5564
Fax: (66-2) 281-0828
E-mail: punyakae@emiscmoe.go.th

Mr. Gordon Slaven
Regional Development Services Manager
(East Asia)
The British Council
254 Chulalongkorn Soi 64
Siam Square, Phayathai Road
Pathumwan, Bangkok 10330

Tel: (66-2) 611-6830
Fax: (66-2) 253-5312
E-mail: gslaven@bc-bangkok.sprint.com

Mr. Awais Latif Piracha
(Doctor Student) Asian Institute of
Technology
P.O. Box 4, Klongluang 12120
Bangkok

Tel: (66-2) 524-5615
Fax: (66-2) 516-2126
E-mail: hsp7837@ait.ac.th

Ms. Pannee Peerapornratana
Education Officer
Office of the National Education
Commission
Sukhothai Road, Bangkok 10300

E-mail: sydmap@oncc.go.th

Dr. Prathip Martin Komolmas
Rector, Assumption University
Huamark, Bangkok 10240

Tel: (66-2) 300-4553
Fax: (66-2) 300-4552
E-mail: martin@au1.au.ac.th

Mr. Nawarat Wongsopa
School Administrator
Santitham Vidhayakhom School
Saha Pattana Road
Ampur Muang Yasothon 35000

Tel: (66-45) 712-327, 712-766
Fax: (66-45) 712-327
Asst. Professor Praophan Plienpoo
Lecturer, King Mongkut's Institute of
Technology Thonburi
Prachauthit Road, Bangmod
Rajburana, Bangkok 10140

Tel: (66-2) 427-0039

Ms. Nantana Santatiwut
Director, Center for Industrial and
Environmental Training
Rm. No. 702 President Office Building
Burapha University, Bang Saeng
Chonburi 20131

Tel: (66-38) 745-856
Fax: (66-2) 745-810
E-mail: nantanas@bucc.buu.ac.th

Dr. Sarnit Wisedsook
Instructor, Rajabhat Institute
Mooban Chombung
Ratchburi 70150

Tel/Fax: (66-32) 261-078

Dr. John Matthews
Associated President
Mission College, Muak Lek Campus
P.O. Box 4, Muak Lek
Saraburi Province 18180

E-mail: mlcolleg@asiaaccess.net.th

Ms. Chanchala Sivamard
Lecturer, Burapha University
Bangsaen, Chonburi

Mr. Amparn Duangpaeng
Assistant Professor
Rajabhat Institute Udonthani
Udonthani Province 41000

Mr. Chaiyosh Imsuwan
Official, Planning Division, Non-formal
Education Department
Ministry of Education
Rajadamnern Road, Dusit
Bangkok

Mr. Nikom Thatree
Director, Naresuan University Library
Naresuan University
Pitsanuloke 65000

Dr. Yongyuth Yuthavong
Director, National Science and
Technology Development Agency
73/1 Rama VI Road, Rajdhevee
Bangkok 10400

Assoc. Prof. Aswin Promsopa
Staff Development Centre
Rajamangala Institute of Technology,
Southern Campus
Muang District, Songkhla 90000

Tel: (62-74) 324-246
Fax: (62-74) 324-245
E-mail: paswin@south.rit.ac.th

Dr. Duangtip Surintatip
Director, External Relations Division,
Office of the Permanent Secretary
Ministry of Education
Rajdamnoen Avenue, Bangkok 10300

Tel: (66-2) 281-3777, 628-5648
Fax: (66-2) 281-0953
E-mail: duangtip@winning.com

Mr. Pairat Trakarnsirinont
Lecturer & Deputy Director
Department of Political Science & Social
Research Institute
Chiang Mai University
239 Huay Kaeo Road
T. Suthep, A. Muang,
Chiang Mai 50200

Tel: (66-53) 942-551
Fax: (66-53) 892-359

Dr. Phonwit Kirdmee
Academical Official
Office of the National Primary Education
Commission
Ministry of Education
Bangkok 10300

Ms. Pawinee Srisukvatananan
Assistant Professor
Faculty of Education
Kasetsart University
50 Pahonyothin Road
Chatuchak, Bangkok 10903

Dr. Sa-Ngop Prasertphan
Instructor, Rajabhat Institute Uttaradit
Uttaradit 53000

Prof. Ratana Poompaisal
Faculty of Education
Department of Non-formal Education
Chulalongkorn University
Bangkok 10330

Mr. Samran Tongpaeng
Head, office of the President
Narasuan University
Tombon Thapho, A. Muang
Phitsanulok 65000

Ms. Yukol Piriyaikul
Senior Science Education
National Science Centre for Education
920 Sukhumvit Road, Klongtoey
Bangkok 10110

Dr. Saisawath Ketchart
Vice-President for Special Activities
Rajabhat Institute Nakhon Si Thammarat,
Tambon Tha-New, A. Muang, Kakhon
Si Thammarat 80280

Mr. Sene Pitakannop
Senior Specialist in Curriculum
Development
Curriculum Development Centre
Department of Curriculum and Instruction
Development
Ministry of Education
Bangkok 10110

Dr. Vichit Varutbangkul
Program Director, School of Education
Assumption University
Huamark, Bangkok 10240

Dr. Somgiart Srijugawan
Associate Professor and Honorary
President, Thailand Adult and Non-
formal Education Association
Department of Vocational Education
Kasetsart University, Bangkok 10900

Asso. Prof. Dr. Sumeth Deoisres
Deputy Head, Department of Educational
Administration
Faculty of Education, Burapha
University, Chonburi 20131

Assoc. Prof. Chari Manisri
Head, Department of Educational
Administration, Faculty of Education,
Burapha University, Chonburi 20131

Asso. Prof. Dr. Chalong Tubsree
Associate Dean for Planning and
Development, Faculty of Education
Burapha University, Chonburi 20131

Dr. Suriyan Nontasak
Associate Dean for Special Affairs
Faculty of Education, Burapha
University, Chonburi 20131

Ms. Kanokporn Sanyapeung
Senior Lecturer, Accounting Department,
Management Science Faculty, Rajabhat
Institute Petchabun
Petchabun 67000

Mr. Polarat Luksaneeyanawin
Head of Education Technology
Department, KMITT
King Mongkut's Institute of Technology
259/282 Sukhumvit 71, Klongtoey
Bangkok 10110

Ms. Lalita Mokping
Lecturer, Chongkorn Language Institute
Phyathai, Bangkok 10300

Ms. Praopan Komolmalya
Curriculum Specialist
Curriculum Development Centre
Department of Curriculum and Instruction
Development, Ministry of Education
Sukhumvit Road, Bangkok 10110

Ms. Mallika Nitayaphorn
Director of Curriculum Development
Centre, Department of Curriculum and
Instruction Development
Ministry of Education
Sukhumvit Road, Bangkok 10110

Assoc. Prof. Dr. Supol Wuthisen
President, Rajaphat Institute
Chachoengsao
422 Marupeng Road, Chachoengsao

Asst. Prof. Dr. Sudaporn
Luksaneeyanawin
Head of Department of Linguistics
Linguistics Research Unit
Chulalongkorn University
Phyathai, Patumwan, Bangkok

Dr. Kriengsak Chareonwongsak
Director, Institute of Future Studies for
Development
134 Ekamai 14, Sukhumvit 63
Bangkok 10110

Ms. Tantip Thamrongwarangoon
Secretary-General, The Sustainable
Community Development Foundation,
Ubonrat Hospital, Amphur Ubonrat
Khon Kaen

Prof. Karl E. Weber
Vice-President for Academic Affairs
AIT, P.O. Box 4, Klong Luang
Phatum Thani 12120

Prof. Malee Pruekpongsawalee
Chairperson, Women and Youth Studies
Programme, Thammasart University,
Bangkok

Prof. Dr. Sermsak Wisalaporn
Director of Doctoral Programme in
Educational Administration
Graduate School
Srinakharinwirot University
Sukhumvit 23, Bangkok 10110

Dr. Chaub Leechor
Test Specialist, Department of
Curriculum and Instruction Development
Rajdamnern Nok Avenue
Dusit, Bangkok 10300

Dr. Pramote Janekara
Director, Institute for Development of
Educational Administrators (IDEA)
60/9 Raikhing Samphran
Nakornprathom 73210

Mr. Samreng Nilpradit
Editor: Education and Teachers,
Arthit Weekly Review Magazine
305/1 Pichai Road, Dusit
Bangkok 10300

Mrs. Kamolinee Suksriwong
Chief of International Affairs Section
Office of the Royal Development Projects
Board
78 Rajadamnern Nok Avenue
Dusit, Bangkok 10300

Mr. Surachai Prasertsaruay
Assistant Dean, Academic Affairs
Faculty of Education,
Kasetsart University,
Jatujak, Bangkok 10900

Dr. Amphon Jindawatthana
Director of Praboromarajchanok Institute
for Health Manpower Development
Permanent Secretary for Public Health
Ministry of Health
Tivanon Road, Nonthaburi 11000

Tel: (62-2) 590-1920
Fax: (62-2) 591-8619
E-mail: amphon@health.moph.go.th

Dr. Chuvej Chansa-ngavej
Associate Professor
Department of Industrial Engineering
Chulalongkorn University
Phayathai Road, Bangkok 10300

Dr. Derek Pornsima
Deputy Secretary-General
Office of Rajabhat Institutes Council
Ministry of Education, Bangkok 10300

Asst. Prof. Dr. Usanee Phothisuk
Instructor, School of Education
Srinakharinwirot University
Sukhumvit 23, Bangkok 10110

Mr. Kullaphol Phollawan
Executive Director, State Attorney (Civil
Litigation), Department of Regional State
Attorney I
Ratanatibet Road, A. Muang
Nonthaburi

Prof. Dr. Padoong Arrayavinyoo
Srinakharinwirot University
Sukhumvit 23, Bangkok 10110

Dr. Wasana Gungvalert
Instructor, Faculty of Education Rajabhat
Institute Nakornrajsima
Ms. Chittreeya Chaisriprom
Test Specialist, Department of
Curriculum and Instruction Development,
Ministry of Education
Bangkok

Dr. Pimpan Dachakupt
Assistant Dean for Academic and
Research Affair, Faculty of Education
Chulalongkorn University, Bangkok

Dr. Thaweesak Putsukee
Research and Planning
Thai Institute for Rural Development
230/52 Vipawadee Rangsit 2
Bangkok 10400

Prof. Chai-Anan Samudavaniga
Director, Vajravudh College
197 Ratchavithree Road
Dusit, Bangkok 10300

Mr. Sunthorn Sunanchai
Consultant, Human Resource
Development Project
3rd floor Rajmongalapisek Building
Ministry of Education, Bangkok 10300

Dr. Suchart Tantanadaecha
Associate Dean for Education Networks,
Division of Education Networks, Faculty
of Education, Chulalongkorn University
Bangkok

Assoc. Prof. Prayoon Sriprasart
Sukhothai Thammathirat Open
University,
Bangpood, Pakkred
Nonthaburi 11120

Prof. Dr. Chaibong Brahmawong
Chair, Department of Educational
Technology and Communications
School of Education, Sukhothai
Thammathirat Open University
Bangpood, Pakkred, Nonthaburi 11120

Dr. Chantana Chanbanchong
Assistant Professor, Faculty of
Education, Naresuan University
A. Muang, Phitsanulok 65000

Dr. Kamol Sudaprasert
Consultant, Basic and Occupational
Education and Training
Ministry of Education
42/9 Senanives Village
Phahoyothin Road, Ladprao
Bangkok 10230

Dr. Thawatchai Chaijirachayakul
Deputy Director, Salaya Center
Department of Education, Faculty of
Social Sciences and Humanities
Mahidol University, Salaya Campus
Nakonpathom 73170

Ms. Pinsuda Siritarangsri
Assistant Provincial Educational Officer
The Provincial Educational Office
86/1 Moo 7, Banlaem District
Phetchburi 76110

Dr. Sakchai Nirunthawee
Associate Professor
Srinakharinwirot University
Sukhumvit 23, Bangkok 10110

Dr. Sunthorn Kohtbantau
Associate Professor/Asst. Vice-President
for Research & International Relations
Sukhumvit 23, Bangkok 10110

Prof. Boonyasak Jaijongkit
Chairman, Mongkut Sobha Foundation
6th Floor, KMIT Building
328 Sri Ayudhya Road, Rajthevee
Bangkok 10400

Prof. Kirti Bunchua
Dean, School of Philosophy and
Religious Studies
Assumption University
128/91 Sikarin Village
Ramkhamhaeng 24, Huamark
Bangkok 10240

Ms. Nophanet Dhamborvorn
Instructor, Rajbhat Suandusit Institution
La-orutit Demonstration School
Rajasima Road, Bangkok 10300

Prof. Kanchana Kunarak
Associate Professor & Chairman,
Graduate Program in Curriculum and
Supervision, Faculty of Education,
Silpakorn University
6 Ratchamankana Road
A. Muang, Nakhon Pathom 73000

Prof. Pragob Kunarak
Associate Professor & Head, Department
of Education Administration, Faculty of
Education, Silpakorn University
6 Ratchamankana Road, A. Muang
Nakhon Pathom 73000

Assoc. Prof. Prasarn Malakul
Vice-President in Academic Affairs
Kasem Bundit University
1761 Patanakarn Road, Suanluang
Bangkok 10250

Prof. Vitorn Vipahat
Director, Rajamangala Institute of
Technology, 399 Samsaen Road, Dusit
Bangkok 10300

Dr. Paitoon Sinlarat
Director, Centre for Professional
Development in Higher Education
Faculty of Education
Chulalongkorn University
Bangkok 10330

Ms. Arceya Rojvithee
Director, Technical Studies and Planning
Division, Department of Skill
Development, Ministry of Labour and
Social Welfare
Mitr Maitri Road, Dindaeng
Bangkok 10320

Ms. Suchada Chairat
Education Officer
Office of the National Education
Commission, Office of the Prime
Minister, Sukhothai Road, Dusit
Bangkok 10300

Dr. Kanjana Akavipat
Officer (Educational Official)
Office of the National Education
Commission, Sukhothai Road, Dusit
Bangkok 10300

Ms. Suwanna Eamsukawat
Education Officer
Office of the National Education
Commission, Sukhothai Road, Dusit
Bangkok 10300

Ms. Putisar Akkapoo
Education Officer
Office of the National Education
Commission
Sukhothai Road, Dusit
Bangkok 10300

Ms. Pagatip Sirirattanachai
Education Officer
Office of the National Education
Commission, Sukhothai Road, Dusit
Bangkok 10300

Ms. Penpan Chittasane
Office of the National Education
Commission, Sukhothai Road, Dusit
Bangkok 10300

Mr. Sainan Hasdin
Education Officer
Office of the National Education
Commission
Sukhothai Road, Dusit
Bangkok 10300

Ms. Endoo Sirijeamratana
Education Officer
Office of the National Education
Commission
Sukhothai Road, Dusit
Bangkok 10300

Ms. Kanlayanee Patimapornthep
Education Officer
Office of the National Education
Commission
Sukhothai Road, Dusit
Bangkok 10300

Ms. Sucharat Tubtimcharoon
Education Officer
Office of the National Education
Commission
Sukhothai Road, Dusit
Bangkok 10300

Ms. Phorntip Suwannaroj
Education Officer
Office of the National Education
Commission
Sukhothai Road, Dusit
Bangkok 10300

Ms. Prapin Virasilp
Education Officer
Office of the National Education
Commission
Sukhothai Road, Dusit
Bangkok 10300

Ms. Vipassarin Prapuntasiri
Education Officer
Office of the National Education
Commission
Sukhothai Road, Dusit
Bangkok 10300

Ms. Jirasri Anavatchkul
Education Officer
Office of the National Education
Commission
Sukhothai Road, Dusit
Bangkok 10300

Ms. Bhijarana Sirichanon
Education Officer
Office of the National Education
Commission
Sukhothai Road, Dusit

Mrs. Pissamai Pichniruke
Education Officer
Office of the National Education
Commission
Sukhothai Road, Dusit
Bangkok 10300

Ms. Kalya Thamratnopkoon
Education Officer
Office of the National Education
Commission
Sukhothai Road, Dusit
Bangkok 10300

Mr. Sutham Panprasert
Senior Adviser, Office of the National
Education Commission
Sukhothai Road, Dusit
Bangkok 10300

Ms. Srinoi Povatong
Adviser, Office of the National Education
Commission, Office of the Prime
Minister, Sukhothai Road, Dusit
Bangkok 10300

Dr. Nantasarn Seesalab
Director, National Institute for
Development of Thai Wisdom and
Education (NISE)
Office of the National Education
Commission, Sukhothai Road, Dusit
Bangkok 10300

Dr. Charin Chatirung
Adviser, Office of the National Education
Commission
Sukhothai Road, Dusit
Bangkok 10300

Ms. Cherapan Poonnakaseam
Education Officer, Office of the National
Education Commission, Office of the
Prime Minister
Sukhothai Road, Dusit
Bangkok 10300

Dr. Surasugdi Labmala
Adviser,
Office of the National Education
Commission
Sukhothai Road, Dusit

Mr. Sumret Prasertsorn
Director, Bureau of Educational Policy
Development and Planning for
Educational Management
Office of the National Education
Commission, Sukhothai Road, Dusit
Bangkok 10300

Dr. Siriporn Boonyananta
Director, Bureau of Educational System
Development and Macro Planning, Office
of the National Education Commission,
Sukhothai Road, Dusit, Bangkok 10300

Dr. Chinnapat Bhumirat
Director, Educational Information Centre,
Office of the National Education
Commission, Sukhothai Road, Dusit,
Bangkok 10300

Ms. Viboonlak Thongcheua
Senior Expert in Educational Evaluation,
Office of the National Education
Commission, Sukhothai Road, Dusit,
Bangkok 10300

Ms. Vilai Sirichoomsang
Education Officer, Office of the National
Education Commission, Sukhothai Road,
Dusit
Bangkok 10300

Ms. Mayuree Charupan
Senior Expert in Educational Policy and
Planning, Office of the National
Education Commission, Sukhothai Road,
Dusit, Bangkok 10300

Ms. Niramom Kittivibul
Chief, International Relations and Co-
operation Division,
Office of the National Education
Commission, Sukhothai Road, Dusit
Bangkok 10300

Ms. Waraiporn Sangnapaboworn
Education Officer, Department of Non-
formal Education
Office of the National Education
Commission, Sukhothai Road, Dusit,
Bangkok 10300

Ms. Arunee Satanupong
Education Officer 8
Office of the National Education
Commission, Sukhothai Road, Dusit

Ms. Wannapa Piansri
Education Officer
Office of the National Education
Commission, Sukhothai Road, Dusit
Bangkok 10300

Ms. Surang Phopruksawong
Education Officer, Office of the National
Education Commission Sukhothai Road,
Dusit, Bangkok 10300

Ms. Tipsuda Sumethsinee
Education Officer 8
Office of the National Education
Commission, Sukhothai Road, Dusit
Bangkok 10300

Ms. Walairat Asaves
Education Officer, Office of the National
Education Commission, Sukhothai Road,
Dusit, Bangkok 10300

Ms. U-sa Theanthong
Instructor 2 L7
Central Regional Non-formal Education
Centre, Tambon Ban Khong, A.
Phutharam, Ratchaburi

Ms. Juthamas Rajchaprasi
Project Coordinator for Hill Tribe
Women, Hill Area Development
Foundation (HADF)
129/1 Moo 4, Pangiew Road Soi 3
Robwiang, Muang, Chiang Rai 57000

Ms. Suda Biyaem
Supervisor, Supervisory Unit,
Department of General Education,
Ministry of Education
C/o Samsenwittayalai School
Rama 6 Road, Phayathai
Bangkok 10400

Mr. James Woodward
Director of Research
Ratchasuda College, Mahidol University
135/111-115 Puttamonthon 4th Avenue
Salaya, Nakornprathom 73170

Prof. Dr. Montri Chulavatnatol
Director, Teacher Education Reform
Office, Suthothai Road, Bangkok

Mr. Phadet Gawsombat
Lecturer, Non-formal Education
Northeastern Region Centre
P.O. Box 4, Ubon Ratchathani 34000

Assoc. Prof. Boontip Siritarungsri
Director of Academic and Development
Services Centre, Sukhothai Thammathiraj
Open University
90 Moo 9, Tambon Raisom
A. Muang, Petchburi 76000

Assoc. Prof. Dr. Boonreang Kajornsri
Head of Division of Educational Research
and Evaluation
Kasetsart University
100/107 Soi Ramurtra 67
Ramintra Road, Ladprao
Bangkok 10230

Dr. Samnao Kajornsri
Associate Professor, Faculty of
Education, Kasetsart University
Bangkok 10900

Ms. Vina Nontapantawat
Senior Supervisor
Supervisory Unit, Department of General
Education
296/32 Soi 5, Petchburi Road
Bangkok 10400

Mrs. Savitri Suwansathit
Secretary-General
Thailand National Commission for
UNESCO
External Relations Division
Ministry of Education
Rajdamnern Avenue, Bangkok

Mr. Chanchai Sanyapueng
Department of Communication & Arts
Faculty of Management Science
Rajabhat Institute Petchabun 67000

Tel: (62-56) 711-396
Fax: (62-56) 722-217
E-mail: chanchai@oric.rajabhat.ac.th

Mr. Nildas Pron
Planning Officer, UNICEF
19 Phra Atit Road
Bangkok 10200

Dr. Nittaya Passornsiri
School of Educational Studies
Sukhothai Thammathiraj Open University
Jaengwattana Road, Pakkred
Nonthaburi 11120

Dr. C. Charles Manjikul
Chairman/CEO
World Education Network
Bangna P.O. Box 26-54
Bangkok 10260

Tel: (62-2) 747-6143, (01) 811-1423
Fax: (62-2) 741-7585
E-mail: wednet@loxinfo.co.th

Dr. Orawan Narongsorasak
Faculty of Education, Rajabhat Petchabun
Institute
Amphur Muang, Petchabun 67000
Tel: (66-56) 711-396 ext. 145, 148
Fax: (66-56) 722-217

Mr. Jonathan Shaw
Chairman Centre for Language and
Educational Technology,
Asian Institute of Technology
P.O. Box 4, Klong Luang
Pathum Thani 12120

Tel: (66-2) 524-5890
Fax: (66-2) 524-5872
E-mail: jshaw@ait.ac.th

Dr. Pierre Walter
Assistant Professor, Centre for Language
and Educational Technology, AIT
P.O. Box 4, Klong Luang
Pathum Thani 12120

Tel: (66-2) 524-5839
Fax: (66-2) 524-5872
E-mail: pgwalter@ait.ac.th

Assoc. Prof. Suchada Nimmannit
Consultant, Academic Training Centre
Chulalongkorn University
Language Institute, Bangkok

Tel: (66-2) 218-6100
Fax: (66-2) 218-6027
E-mail: flngsnm@chulkn.car.chula.ac.th

Assoc. Prof. Dr. Preechar Wihokto
School of Education
Sukhothai Thammathiraj Open
University, Bangkok

Tel: (66-2) 503-2121-4
Fax: (66-2) 503-3567

Assoc. Prof. Lawan Wilyawudhikul
Centre for Environmental and Global
Education, Faculty of Education
Chulalongkorn University
Bangkok 10330
Tel: (66-2) 218-2552, 218-2417
Fax: (66-2) 215-3568

Dr. Seni Rodanan
Retired Businessman
85/4 Soi Rodanan 1, Sukapiban 2 Road,
Kwaeng Klongkoom, Bungkoom,
Bangkok 10240

Tel: (66-2) 374-0305-7
Fax: (66-2) 374-0308

Asst. Prof. Praophan Plienpoo
Lecturer, Department of Electrical
Technology Education, King Mongkut's
Institute of Technology Thonburi,
Rasburana, Bangkok 10140

Ms. Khemsiri Praphamontriping
Head Master, Praphamontri School
21/405 Moo 12, Bangna-Trad Road
Bangna, Prakanong, Bangkok 10260

Tel: (66-2) 361-7242-4
Fax: (66-2) 749-3311

Sr. Mater Leal
Coordinator, Daughters of Charity
142-38 Soi Suksowithaya
North Sathorn Road, Bangkok

UK

Prof. Keith S. Bardon
Dean, Faculty of Natural Sciences
University of Hertfordshire
College Lane, Hatfield
Hertfordshire, UK. AL10 9AB

Tel: (44-1707) 284-500
Fax: (44-1707) 284-514
E-mail: K.S.Bardon@herts.ac.uk

Mr. Seamus Filor
Coordinator, Master of Landscape
Architecture Course, Edinburgh College
of Art, Lauriston Place
Edinburgh, Scotland

Tel: (44-131) 221-6093
Fax: (44-131) 221-6995
E-mail: S.Filor@caad.ed.ac.uk

Mr. Tony Lavender
Part-time Lecturer in Media Education
Department of Applied Arts
University of Strathclyde
Jordanhill Campus, 76 Southbrae
Drive, Glasgow G13 1PP
Scotland

Tel: (44-141) 950-3223/3476
Fax: (44-141) 950-3314
E-mail: t.m.laverder@strath.ac.uk

Ms. Junko Oikawa
PhD Research Student
Department of Horticulture, School of
Plant Sciences
University of Reading, Whitenights
P.O. Box 221 Reading
Berkshire, RG6 2AS

Tel: (44-1734) 318-071
Fax: (44-1734) 750-630

Dr. Naz Rassool
Lecturer In Education
University of Reading
Bulmershe Court, Earley
Reading RG6 1 HY

Tel: (44-118) 931-8861
Fax: (44-118) 931-8863
E-mail: N.Rassool@reading.ac.uk

Dr. David Uzzell
Department of Psychology
University of Surrey
Guildford, Surrey, GU2 5XH

Tel: (44-1483) 259-430
Fax: (44-1483) 532-813
E-mail: d.uzzell@surrey.ac.uk

Dr. Chris Webster
Reader, Department of City and Regional
Planning, University of Wales Cardiff
P.O. Box 906 Cardiff CF1 3YN

Tel: (44-1222) 864-000
Fax: (44-1222) 874-845
E-mail: webster@cf.ac.uk

USA

Dr. Judy Braus
Director of Environmental Education
World Wildlife Fund
1250 24th Street NW
Washington, DC
20037

Tel: (1-202) 778-9542
Fax: (1-202) 861-8378
E-mail: judy.braus@wwfus.org

Dr. Bernard Fradkin
Dean of Learning Resources
College of DuPAGE Library
College of DuPAGE
425 22nd Street
Glen Ellyn, IL 60137-6599

Tel: (1-630) 942-2351
Fax: (1-630) 858-8757
E-mail: fradkin@cdnet.cod.edu

Ms. Danielle Miller
International Programs
The GLOBE Program
744 Jackson Place
Washing, DC 20503

Tel: (1-202) 395-7600
Fax: (1-202) 395-7611
E-mail: dmiller@globe.gov

Dr. Elliot Mininberg
Professor and Chair, Department of
Educational Leadership & Policy Studies,
California State University
18111 Nordhoff Street
Northridge, CA 91330-8265

Tel: (1-818) 677-2591
Fax: (1-818) 677-2598
E-mail: elliot.mininberg@csun.edu

Dr. Lynn L. Mortensen
Education Director
President's Council on Sustainable
Development
730 Jackson Place NW Suite 301
Washington DC 20503
Tel: (1-202) 338-3024
Fax: (1-202) 408-7590
E-mail: lynnmort@aol.com

Uzbekistan

Dr. Alisher Ikramov
Secretary-General
Uzbekistan National Commission for
UNESCO
54 Buyuk Ipak Yuli
Tashkent 700137

Tel: (7-3712) 670-561
Fax: (7-3712) 670-538

Viet Nam

Dr. Thai Than Son
Professor & Dean, Faculty of
Management & Information Technology,
Hanoi University of Technology,
National Open University Institute, Nha
B101, Phuong Bach Khoa, Hanoi

Tel: (84-4) 869-4824
Fax: (84-4) 869-5993
E-mail:
TSOHNHOU@BDVN.VNMAIL.VND.NET

Mr. Truong Tien Tung
Head, Centre for Information Systems
Faculty of Management & Information
Technology, Hanoi University of
Technology, National Open University
Institute, Nha B101, Phuong Bach Khoa,
Hanoi

Tel: (84-4) 869-4824
Fax: (84-4) 869-5993

Mr. Nguyen Tai Hao
Hanoi University of Technology
Hanoi

Prof. Nguyen Duc Chinh
Vice President
Vietnam National University
Duong Thang Long, Cau Glay
Hanoi

Tel: (84-4) 834-1038
Fax: (84-4) 834-6056

ACEID Award Guests

Mr. Shigeru Yoshida
Director-General
National Institute for Educational
Research (NIER)
6-5-22 Shimomeguro, Meguro-ku
Tokyo 153, Japan

Mr. Osamu Yasuda
National Institute for Educational
Research (NIER)
6-5-22 Shimomeguro, Meguro-ku
Tokyo 153, Japan

Mr. Ryo Watanabe
Chief, Section for International Co-
operation, National Institute for
Educational Research (NIER)
6-5-22 Shimomeguro, Meguro-ku
Tokyo 153, Japan

Dr. Lee Don Hee
President
Korean Educational Development
Institute (KEDI)
92-6 Umyeon-dong, Seocho-gu
Seoul, 137-791
Republic of Korea

Dr. Kyung He Sung
Korean Educational Development
Institute (KEDI)
92-6 Umyeon-dong, Seocho-gu
Seoul, 137-791
Republic of Korea

Dr. Rung Kaewdang
Secretary-General
Office of the National Education
Commission, Sukhothai Road
Bangkok 10300

Recipients of ACEID Post-graduate Conference Scholarships

Mrs. Sirilak Srisamange
Department of Higher Education
Faculty of Education
Chulalongkorn University
Bangkok 10330

Prof. Pornchulee Achava-Amrung
Associate Professor, Department of
Higher Education, Faculty of Education,
Chulalongkorn University
Bangkok 10330

Ms. Sununta Suwannasilp
Head, Basic Science and General
Education Department,
Borommarajonnance College of Nursing
Catatorn Road
Ratchaburi 70000

Miss Soontaree Doungtipya
Senior Lecturer, Rajabhat Institute
Kamphaengphet
A. Muang, Kamphaengphet 62000

Ms. Panvipa Bannakiet
Nurse Instructor, Faculty of Nursing in
Mission College
430 Pisanulok, Dusit, Bangkok 10300

Mr. Prajuab Suksomboon
Vice President, Rajabhat Institute Loei
Loei

Cdr. Praon Suntornviphat
Head of Educational Research Section
Royal Thai Naval Academy
204 (Royal Thai Naval Academy)
Sukhumvit Road, Paknam
A. Muang, Samutprakarn

Mr. Chalermchai Manoosawet
Assistance to Vice President for Student
Affairs, Yonok College
Lampang 52000

Prof. Boonsiri Anandaset
Lecturer of English, English Language
Institute, Chulalongkorn University
Bangkok 10330

Mrs. Malee Dhamasiri
Director of HRD (W1)
Thai International
Vipawadee Rungsit Highway
Bangkok 10400

UNITED NATIONS AGENCIES

Mr. Michael Heyn
Regional Representative
UNDP
United Nations Building
Rajdamnern Nok Avenue
Bangkok 10200

Tel: (66-2) 288-1234 Ext. 288
Fax: (66-2) 280-0556

Dr. Suvit Yodmani
Director and Regional Representative
UNEP
United Nations Building
Rajdamnern Nok Avenue
Bangkok 10200

Tel: (66-2)
Fax: (66-2) 280-3829

Mr. Anthony J. Hewett
UNICEF Representative for Thailand
19 Phra Atit Road
Bangkok 10200

Tel: (66-2) 280-5931
Fax: (66-2) 281-6032

Dr. Laeka Piya-Achariya
Project Officer (Education)
UNICEF
19 Phra Atit Road
Bangkok 10200

Tel: (66-2) 280-5931
Fax: (66-2) 281-6032

Mr. Peter Gyallay-Pap
UNDP-ETAP, P.O. Box 877
Phnom Penh, Cambodia

Tel: (855-23) 218-370; 213-462
Fax: (855-23) 216-982
E-mail: undpetap@forum.org.kh

UNESCO, Paris

Mr. Federico Mayor
Director-General

Mr. S. Okajima
Director, BRX/APA

Mr. T. Huq
Special Adviser to the Director-General

Ms. Winsome Gordon
Director, Primary Education Section
Basic Education Division

Mrs. M. Sauliere
Programme Specialist

UNESCO, Geneva

Ms. Isabel Byron
UNESCO: IBE

UNESCO, Dhaka

Mr. A.A. Khan
Director

UNESCO, Beijing

Mr. N. Noguchi
Director

Mr. John Elfick
Educational Adviser

UNESCO, New Delhi

Mr. Moegiadi
Director

UNESCO PROAP, Bangkok

Mr. Victor Ordonez
Director

Mr. Rupert Maclean
Chief of ACEID

Mr. Wang Yibing
Specialist in Higher Education

Mr. Byung-Ok Park
Assistant Programme Specialist in
International Education and Values
Education, ACEID

Mr. K. Kuroda
Associate Expert in Educational
Innovation for Development
ACEID

Mr. Whan-sik Kim
Assistant Programme Specialist in TVE,
ACEID

Dr. Ian Birch
Consultant, ACEID

Mr. Prem Kasaju
Co-ordinator, APPEAL

Mrs. Lucille C. Gregorio
Specialist in Science and Technology
Education, APPEAL

Mr. Kiichi Oyasu
Specialist in Literacy, APPEAL

Ms. Vibeke Jensen
Specialist in Basic Education for Girls
and Women, APPEAL

Ms. Darunee Riewpituk
Specialist in Continuing Education,
APPEAL

Mr. J. Middelborg
Associate Expert in Literacy and
Continuing Education, APPEAL

Mr. K. Ishida
Associate Expert in Literacy and
Continuing Education, APPEAL

Ms. A. Guveya
Associate Expert in Basic Education
APPEAL

Mr. Jorge Sequeira
Programme Specialist in Educational
Management, Information and Research
UNESCO, PROAP

Miss Sarinya Sophia
Programme Clerk, RUSHAP

Ms. Kraiwan Charnviwatana
Secretary, ACEID

Miss Maleewan Skoonsuksadec
Secretary, ACEID

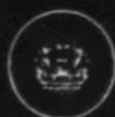
Miss Kularb Buranamontri
Secretary, ACEID

Ms. Supimol Vijarnpol
Secretary, ACEID

Miss Wallapa Aramwitha
Secretary, APPEAL

Ms. Amporn Ratanavipak
Secretary, APPEAL

Ms. Rachanee Chamnankit
Secretary, APPEAL



ACEID

APPEAL

Educational Innovation
for Sustainable Development

BEST COPY AVAILABLE

359